

I. INTRODUCTION

A. OVERVIEW

In recent years, the search for new strategies to bring Medicare costs under control has led to growing interest in the cost-containment potential of health maintenance organizations (HMOs), which provide health care services on an at-risk, capitation basis. To gain experience with contracting for Medicare services on a capitated basis, the Health Care Financing Administration (HCFA) initiated two sets of experiments:

- o The Medicare Capitation Demonstrations. Solicited in 1978, eight HMOs in five market areas participated in this initial demonstration, beginning in August 1980.
- o The Medicare Competition Demonstrations. Solicited in 1982, contracts were awarded to 27 HMOs in 14 market areas. The first HMO to become operational under this program began enrolling Medicare beneficiaries in August 1982.

The second set of demonstrations, which are the focus of this report, are being evaluated by Mathematica Policy Research and its principal subcontractor, the Medical College of Virginia, under a contract awarded by HCFA in September 1983.

The key feature of these demonstrations was the willingness of participating HMOs to accept full responsibility and financial risk for providing Medicare benefits to any Medicare beneficiary who applied.¹ In return, for each beneficiary it enrolled, an HMO received from HCFA a

¹Only beneficiaries with End Stage Renal Disease were excluded from enrolling in a demonstration HMO; however, enrollees who subsequently were classified as having ESRD were to be retained in the demonstration program.

prospectively determined monthly payment equal to 95 percent of the Adjusted Average Per Capita Cost (AAPCC), the estimated actuarial average cost to HCFA for beneficiaries of that age, sex, Medicare entitlement status¹, and Medicaid/institutional status in the fee-for-service sector of the plan's geographic location.

Over 50 HMOs and other alternative health plans applied to participate in the Medicare Competition Demonstration program. However, only 27 of these plans were permitted to become operational, since regulations were already being prepared to implement a national program under which HMOs and Competitive Medical Plans (CMPs) would be permitted to enroll Medicare beneficiaries under routine conditions. These regulations, authorized by Section 114 of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), were published in early 1985 (Federal Register, January 10, 1985), and the demonstrations were terminated between April 1 and June 30 of that year. At the end of the demonstration period, all 27 plans continued to participate in the Medicare program under TEFRA regulations, which limit the retention of surplus earnings by HMOs/CMPs, but are otherwise quite similar to the demonstration rules.

Although the Medicare Competition Demonstrations were terminated in the spring of 1985, the evaluation is continuing and will include the experience of the participating HMOs under the TEFRA regulations in the post-demonstration period. A key objective of the evaluation is to assess the impact of risk-based contracting on HCFA's costs of providing basic Medicare services to enrollees. Since previous research indicates that

¹The three categories of Medicare entitlement status are aged, disabled (under age 65), and ESRD-eligible.

HMOs are able to reduce health care costs primarily through reductions in the use of services, a related objective of the evaluation is to assess the impact of risk-based contracting on enrollees' service use. In subsequent reports, these use and cost impacts will be assessed using a comparison-group methodology that relies on individual-level data on demonstration enrollees, nonenrollees in the market areas of the participating health plans, and Medicare beneficiaries in a set of external, matched comparison sites. The present report is designed to provide some preliminary, descriptive evidence, prior to the availability of individual-level data, on the use of services by demonstration enrollees and on the revenues and expenses experienced by the participating plans. This analysis is based on plan-level data obtained from Quarterly Administrative Reports submitted by the HMOs during 1984. Our findings, though preliminary in nature, will be useful to HCFA as it implements the TEFRA program as well as to HMOs and CMPs considering entry into the Medicare market under that program.

B. OBJECTIVES OF THIS STUDY

This study has two major objectives. The first is to provide some preliminary, descriptive evidence on the service utilization rates and revenues and expenses experienced during 1984 by individual HMOs participating in the Medicare Competition Demonstration. Our presentation of plan-specific findings will yield useful insights into the range of plan experiences under the demonstration as well as overall mean experience levels. Our second major objective is to examine the relationship between the plans' utilization and financial experience under the demonstration and (1) specific characteristics of the plans and the market areas in which they operate, and (2) the plans' enrollment experiences. This will provide

some preliminary insights into the factors that are likely to influence HMO performance in the Medicare market.

Prior to examining the utilization and financial experience of the demonstration HMOs, we will present some background information on the characteristics of the plans and their enrollment experiences, including:

- o A presentation of descriptive information on the organizational and financial characteristics of the plans, the characteristics of the market areas in which they operate, and the characteristics of the benefit packages offered to enrollees.
- o An examination of the enrollment experience of the plans, including information on enrollment levels and growth rates, demographic characteristics of enrollees, and disenrollment rates.

This information on the characteristics and enrollment experience of the plans will serve two purposes. First, it will provide some background information on the plans included in the analysis and thus provide a general context for interpreting our findings on utilization rates and revenues and expenses. Second, for analytic purposes, it is important to distinguish the plans by these various characteristics in order to determine whether and how such characteristics are associated with the levels of use and cost of health services and HMO financial performance.

Our analysis of the utilization experience of the demonstration HMOs will focus on use rates for hospital services, as well as other selected services such as ambulatory encounters, skilled nursing facility care, home health agency visits, and emergency room visits. In addition, we will examine use rates for a variety of supplemental services not covered under Medicare that were offered by many of the plans to attract enrollees. These include prescription drugs, optometric exams, eyeglasses, audiological exams, hearing aids, and dental care.

In the case of hospital services, for which the necessary data are available, use rates experienced by each plan in 1984 will be compared to projected 1984 use rates in the Medicare fee-for-service sector of that plan's local market area.¹ Since enrollees in the plans were self-selected, differences between hospital use rates experienced by the plans and those experienced in the local fee-for-service sector will include both (1) the effects of any systematic differences between enrollees and nonenrollees in the need for health care and (2) the impact of HMOs on service use. The aggregate data available for this report will not permit us to distinguish these two factors, although this will be done in subsequent reports once individual-level data become available. Therefore, the comparisons in this report of hospital use rates experienced by the plans to those experienced in the local fee-for-service sector are essentially descriptive in nature.

In addition to examining hospital use rates for individual plans, we will also examine the relationship between the plans' hospital use rates (measured relative to use rates in the local market area) and the plan characteristics and enrollment experiences cited above. This will provide some preliminary evidence on the factors that are likely to influence the utilization experience of HMOs in the Medicare market.

Our analysis of the revenues and expenses experienced by the demonstration HMOs will consist of several components. First, to gauge the overall financial performance of the plans under the demonstration, we will examine the total net revenue per enrollee in each plan, both on an annual

¹An estimate of 1984 fee-for-service hospital use rates for each market area will be based on utilization data reported in the Area Resource File for 1982, which we have projected forward to 1984 using state-specific hospital use data provided by HCFA.

basis for 1984 and for individual quarters in that year. We will next examine the individual components of total expenses in each plan. The major expense categories to be examined are institutional expenses, noninstitutional medical expenses, expenses for supplemental services, and administrative and other expenses. For each of these four categories, expenses per enrollee will be examined in each plan, both on an annual basis and for individual quarters in 1984. Finally, to provide some preliminary insights into the factors that are likely to influence the financial performance of HMOs in the Medicare market, we will examine the associations between total net revenue per enrollee and (1) the characteristics of the plans and the markets in which they operate, (2) the plans' enrollment experiences, and (3) the plans' relative service utilization rates.

C. LIMITATIONS OF THIS STUDY

The descriptive analyses conducted in this study provide the most comprehensive picture available to date on the utilization and financial experience of the HMOs participating in the Medicare Competition Demonstration. However, readers must be cautioned at the outset about some important limitations of this study. One of the major limitations is that individual-level data are not yet available, and the analysis is therefore based on aggregate data provided by the plans in a series of Quarterly Administrative Reports submitted to HCFA for 1984. The Quarterly Reports contain self-reported information on enrollment, utilization of services, and revenues and expenses for each plan.

Our reliance on plan-level data limits the basic objectives of this study. In particular, this study is not designed to assess the impact of

risk-based contracting on HCFA's costs or on enrollees' use of services. Such impacts will be estimated in subsequent reports once we acquire individual-level data on the use and cost of services for demonstration enrollees and for two comparison groups -- nonenrollees in the market areas of the participating HMOs and beneficiaries in a set of matched, external comparison sites. Demonstration impacts will be assessed by statistically comparing enrollees' post-enrollment service use and cost to that of the two comparison groups, controlling for the effects of nonrandom selection. Since in the present study we are limited to plan-level data on service use and cost by enrollees, and comparison group data are not yet available, the analyses to be conducted are descriptive in nature.

Another important limitation of this study is that all of the utilization and financial data are self-reported by the plans, and for most data elements there are no independent data sources available for validation. In particular, the financial data are taken from unaudited financial statements and are based on accounting assumptions which may vary across plans. For Federally qualified plans, the process of reporting financial data is somewhat standardized in order to meet the information needs of the Office of HMOs, HCFA, DHHS. However, the methods of allocating expenses to the Medicare demonstration enrollees for other than health care service-related expenses is necessarily arbitrary. Furthermore, each of the plans varies in the sophistication of its accounting system and its ability to capture expenses when they accrue versus when they actually occur. These factors could make comparisons across plans problematic and might produce different results than those

that might be obtained if uniform accounting practices had been available to report the data for each plan.

D. ORGANIZATION OF THE REMAINDER OF THE REPORT

The remainder of this report consists of four chapters. Chapter II discusses the conceptual framework for the analysis and includes a review of the relevant literature, a detailed discussion of the research issues to be investigated, and a discussion of the study's major limitations. Chapter III provides an overview of the data sources to be employed and a discussion of the limitations of those data. Chapter IV, which presents our empirical findings, begins with the presentation of some background information on the HMOs included in the analysis, including the organizational and financial characteristics of the plans, the characteristics of the market areas in which they operate, the benefit packages offered to enrollees, and the plans' enrollment experiences. With this information as background, we then present the findings of our descriptive analysis of the use of services by demonstration enrollees and the revenues and expenses experienced by the participating HMOs. Finally, Chapter V summarizes our findings and discusses how the analysis will be extended in future reports once individual-level data become available.

II. CONCEPTUAL FRAMEWORK FOR THE ANALYSIS

The purpose of this report is to provide some preliminary, descriptive evidence on the utilization and financial experience of the HMOs participating in the National Medicare Competition Demonstration. The analysis will be based on plan-level data derived from Quarterly Administrative Reports submitted by the plans in 1984. In this chapter, we first review previous research on the performance of HMOs in order to guide the empirical analyses presented in this report. We then discuss the specific hypotheses and research issues to be investigated, and conclude by discussing the major limitations of this study.

A. REVIEW OF PREVIOUS RESEARCH

Health maintenance organizations (HMOs), which provide comprehensive health care services on an at-risk, capitation basis, have often been seen as a means of providing health care in a more cost-effective manner than the traditional fee-for-service sector, since the incentives created by capitation are presumed to result in providers being more cost-conscious and more efficient in the use of resources. Since the expansion of HMOs into the Medicare market in significant numbers is a fairly recent phenomenon, previous research on the impact of HMOs on the use and cost of services has focused primarily on the experiences of the under 65 population. Furthermore, with the exception of two demonstration programs, HMOs which served Medicare beneficiaries in the past did so primarily under cost-based reimbursement. Thus, there is little available evidence on which to base policy decisions regarding risk-based payments in the Medicare program under TEFRA. In this chapter, we review the major

findings of prior research on the impacts of HMOs on the use and cost of services, first focusing on evidence related to the under 65 population and then turning to evidence on the Medicare population.

It will be useful at the outset to distinguish two major categories of HMOs that have been discussed in the literature: the prepaid group practice (PGP) and the individual practice association (IPA). PGPs have traditionally paid their physicians on a salary or capitation basis and have been organized as either staff plans or group plans. In a staff plan, the physicians are employed directly by the HMO or by a related organization, while in a group plan, the physicians are members of a medical partnership or corporation which contracts with the HMO to provide physician services. The second major category of HMO, the IPA, generally involves a large number of independent physicians or physician groups who draw only a minority of their patients from the HMO. IPAs have traditionally paid their physicians on a fee-for-service basis, although our case studies of the plans participating in the demonstration reveal that capitation of medical groups or individual physicians has become quite common.

1. Evidence for Private Sector Enrollees

The vast majority of the studies of the use and cost of services in HMOs have focused on the experiences of private sector, nonaged enrollees (e.g., Luft, 1981; Manning et al., 1984). The evidence provided by past research indicates that the total costs of medical care (premiums plus out-of-pocket expenses) are lower for HMO enrollees than for comparable persons covered by conventional insurance plans. This differential ranges from 0 to 40 percent, depending on the characteristics of the HMO studied. The evidence indicates that the lower costs experienced by HMO enrollees are

attributable primarily to a lower use of hospital services, which is due largely to fewer admissions rather than to shorter lengths of stay. Studies which have examined rates of hospital utilization in HMOs relative to the fee-for-service sector have found substantially different results depending on the type of HMO studied. Lower rates of hospital use of approximately 35 percent have been reported for PGP enrollees, compared with 5 to 25 percent lower rates for IPA enrollees.

Unlike hospital care, where HMOs have strong incentives to reduce utilization, the incentives regarding ambulatory care are mixed. On the one hand, HMOs have an incentive to encourage the use of ambulatory care if such care can serve as a substitute for more expensive inpatient care. On the other hand, however, capitation payments provide a strong incentive to reduce the utilization of all services, including those provided on an ambulatory basis. Luft (1981), in his extensive review of the literature, found that the evidence on differentials between HMOs and the fee-for-service sector in the utilization of ambulatory services is mixed. While a majority of the studies reviewed found that HMO enrollees have a somewhat higher number of ambulatory visits, a substantial minority of the studies found the opposite result. However, an important pattern that emerged from these studies is that ambulatory visit rates tend to be higher among IPA enrollees than among PGP enrollees.

In summary, the available evidence indicates that HMO enrollees, particularly those in PGPs, experience lower total costs and lower rates of hospital use than comparable people in the traditional fee-for-service sector. However, the factors which underly these differences have not been fully explained. One issue that has been explored in the literature is the

role or the self-selection of both enrollees and physicians in explaining the observed cost differentials. If HMOs are able to attract enrollees who are low users of care, because they are either healthier than average or they prefer less medical intervention, the observed cost differentials between HMOs and the fee-for-service sector would overestimate the true impact of HMOs on costs. Similarly, observed cost differentials would overstate the true impact of HMOs if the physicians who choose to join HMOs are primarily those with a cost-conscious style of practice. Previous research on self-selection has focused primarily on the self-selection of enrollees rather than physicians. Luft has reviewed the available evidence on the characteristics of HMO enrollees relative to persons in the fee-for-service sector. Such evidence consists of comparisons of HMO enrollees and nonenrollees on the basis of (1) various sociodemographic and attitudinal characteristics and (2) observed use and cost of medical services prior to the enrollment decision. These studies have yielded mixed results, and Luft concluded that "at this time, accurate estimates of the relative importance of the selection effect vis-a-vis the HMO effect are impossible to make" (Luft, 1981, p. 51).

While studies of the self-selection of enrollees into HMOs have generally yielded mixed results, Luft observed two important patterns among the findings. First, the nature of the self-selection process depends on the magnitude of the HMO's premium relative to that of the available alternative insurance plans. When the HMO's premium is relatively high, the enrollment group consists predominantly of those who anticipate substantial usage of the HMO services. As the premium differential declines, the HMO becomes more attractive to people who anticipate low usage. Secondly, the

nature of the selection process depends on whether joining the HMO requires severing existing relationships with fee-for-service providers. People with an established relationship with a physician are generally reluctant to switch providers to join an HMO. Therefore, closed panel PGPs have been most attractive to people without such a relationship. This consideration is less relevant for IPAs, since they often include many of the private physicians in an area. If the lack of an established relationship with a physician is associated with better health or a lower preference for medical intervention, PGPs may be expected to experience more favorable selection than IPAs. While the evidence on this issue is weak, the studies reviewed by Luft provide some limited support for this hypothesis.

Most of the research on the use and cost of services in HMOs has focused on comparisons with the fee-for-service sector. However, some studies have investigated the question of whether the use and cost of services by HMO enrollees varies with the duration of membership in the plan. Some evidence has appeared in the literature which indicates that there is a "startup effect" associated with new enrollees in an HMO (Baloff and Griffith, 1984; Griffith and Baloff, 1981; Yesalis and Bonnet, 1976). These studies have found that new enrollees experience high initial rates of utilization that decline with increasing duration of plan membership. The explanation that has been offered for this finding is that the high initial utilization rates result from new members exploring the plan, testing the benefits offered, and undergoing screening and treatment for pre-existing illnesses.

2. Evidence for Medicare Beneficiaries

Relatively few studies have examined the use and cost experiences of Medicare beneficiaries in HMOs. The available studies have been

reviewed by Luft (1981) and Trieger et al. (1981).¹ These studies are of limited relevance, however, because the HMOs were paid on a cost reimbursement basis rather than on a risk basis. In addition, the HMO enrollees retained their Medicare coverage for services rendered by outside providers. Despite the fact that the HMOs were not at risk, these studies generally found that total Medicare reimbursements were lower for beneficiaries enrolled in HMOs than for fee-for-service comparison groups. The lower total costs for HMO enrollees were attributable to lower reimbursements for inpatient care, although this was partially offset by higher reimbursements for physician services. The latter was due in part to out-of-plan use.

The nature and extent of any biased selection of Medicare beneficiaries into HMOs has been investigated by Eggers (1980) and Eggers and Prihoda (1982). Unlike the studies of the cost experiences of Medicare HMO enrollees described above, these two studies of biased selection are based on the experiences of HMOs operating under risk contracts. Eggers and Prihoda compared the pre-enrollment cost experiences of enrollees in three risk-based HMOs (Fallon, Kaiser, and Marshfield) to that of nonenrollees in the same area. They found that total Medicare reimbursements over a four year pre-enrollment period were substantially lower among enrollees in all three plans. Eggers and Prihoda next examined the extent to which the differences in pre-enrollment costs could be accounted for by the actuarial adjustment factors included in the AAPCC. For each plan, the mean pre-enrollment reimbursement level for nonenrollees was adjusted to control for

¹The cited studies are Corbin and Krute (1975), Weil (1976), Goss (1975), and Densen et al. (1978).

differences between enrollees and nonenrollees in the distribution across AAPCC rate cells. In the Fallon and Kaiser plans, the differences in pre-enrollment mean costs were reduced by this adjustment, but they remained substantial. This is consistent with the findings of an earlier study by Eggers (1980) for the Group Health Cooperative of Puget Sound. However, in the Marshfield plan, there was no statistically significant difference between the pre-enrollment costs for enrollees and nonenrollees following the AAPCC adjustment. This suggests that the nature of the selection process may vary among individual HMOs. One factor that may account for the differences observed by Eggers and Prihoda is that the Marshfield plan included most of the providers in the area, so most beneficiaries did not have to switch providers to join the plan. This was not true for the other plans studied, so these plans were likely to enroll a large proportion of beneficiaries who had no previous relationship with a provider and thus had lower prior health care costs. The extent to which this factor accounts for the differences observed by Eggers and Prihoda is not known. It is possible that the Marshfield plan differed from the other plans studied in other respects that may have accounted for the observed differences.

The analyses of Eggers and Prihoda are based on the presumption that prior use is a good predictor of future use. Thus, if the AAPCC adjustment fails to adequately control for inherent differences between enrollees and nonenrollees in the tendency to use services in the pre-enrollment period, it is unlikely to do so in the post-enrollment period. In particular, their findings for the Fallon and Kaiser plans suggest that the existing AAPCC formula would result in Medicare overpaying those plans relative to their enrollees' actual risk of incurring medical expenses.

However, there are conflicting views in the literature over the issue of whether prior use is in fact a good predictor of future use. On the one hand, studies by McCall and Wai (1984) and Anderson and Knickman (1984) have emphasized that cohorts of high (low) users of care tend to remain high (low) users of care over time. On the other hand, however, Welch (1984) and Beebe (1985) emphasize that cohorts of high and low users regress toward the mean over time. Additional research is needed to determine the extent to which prior use is a good predictor of future use for beneficiaries who enroll in an HMO.

B. RESEARCH ISSUES TO BE INVESTIGATED

The major objectives of this study are as follows:

- o To examine utilization rates among demonstration enrollees in each plan.
- o To examine the expenses per enrollee in each plan and compare those expenses to the revenues received per enrollee.
- o To examine the associations between HMO financial performance and relative service use rates, as well as examining the associations between each of those outcome measures and (1) the characteristics of the plans and the market areas in which they operate, and (2) the plans' enrollment experiences.

In the remainder of this section, we discuss the specific research issues that will be investigated within each of these three major areas of interest.

1. Examination of Utilization Rates

An important objective of this report is to examine utilization rates among demonstration enrollees in each plan. Since previous research

has indicated that HMOs achieve their cost savings primarily through a reduction in the use of hospital services, our primary focus will be on examining enrollees' use rates for hospital care. However, we will also examine use rates for a range of other services, such as ambulatory encounters, SNF care, and home health agency visits. Also of interest are use rates for supplemental services offered by some of the plans that are not covered by Medicare, such as prescription drugs, optometric exams, eyeglasses, hearing exams, hearing aids, and dental care. For each of these services, utilization rates will be presented for individual HMOs, thus providing information on the distribution of use rates across plans as well as overall mean use rates.

In the case of hospital services, for which the necessary data are available, use rates experienced by each plan will be compared to projected 1984 use rates in the Medicare fee-for-service sector of that plan's local market area. Such comparisons will provide a useful benchmark for assessing the plans' hospital use rates under the demonstration. However, differences between hospital use rates experienced by the plans and those experienced in the fee-for-service sector of the local market areas may be due to a number of factors, including (1) systematic differences between demonstration enrollees and nonenrollees in the need for health care services, and (2) the ability of the plans to constrain hospital use rates. Since the data available for this study will not permit us to disentangle the effects of these different factors, comparisons of the plans' hospital use rates to use rates in the local market areas are essentially descriptive in nature. In subsequent reports, a comparison-group methodology that relies on individual-level data will be used to isolate the effects of risk-based contracting on enrollees' service use.

2. Examination of Revenues and Expenses by Plan

Another major objective of this study is to examine the expenses per enrollee in each plan and to compare those expenses to the revenues received per enrollee. In addition, we will examine the components of total expenses in each plan.

The primary source of revenue for the plans are the capitation payments from HCFA made on beneficiaries' behalf, although many plans generate additional revenues by requiring enrollee premiums and copayments on covered services. For each Medicare beneficiary enrolled under a risk contract, an HMO receives a prospectively determined monthly payment from HCFA that depends on the demographic characteristics of the enrollee as well as on the plan's geographic location. To determine the appropriate rate of payment, each enrollee is assigned to a rate cell based on age, sex, Medicare entitlement status, institutional status, and Medicaid status. The payment the plan receives for that enrollee is set at 95 percent of the adjusted average per capita cost (AAPCC) for the rate cell to which the enrollee is assigned. For a given geographic area, the AAPCC corresponding to each rate cell represents HCFA's estimate of the average per capita cost it would experience in the fee-for-service sector for beneficiaries in that cell.

The plan's costs of serving Medicare beneficiaries can be divided conceptually into three components: (1) the cost of providing standard Part A and Part B Medicare benefits, (2) the cost of offering supplemental benefits to attract enrollees, and (3) marketing and administrative costs. The costs associated with supplemental benefits are of two types. First are the costs of any reduction or elimination of beneficiary cost-

sharing for standard Medicare services. Second are the costs of offering additional services, such as routine physical exams, immunizations, prescription drugs, optometric exams, eyeglasses, audiological exams, hearing aids, and dental care.

The financial experience of any given HMO under the demonstration depends on a variety of different factors. For example, one such factor is the richness of the benefit package offered to enrollees. Benefit packages vary across plans with respect to the range of supplemental benefits offered, the magnitude of any enrollee premium, and cost-sharing requirements for covered services. Another important factor contributing to a plan's overall financial experience is its ability to constrain the use of services, particularly inpatient hospital care. In addition, the nature and extent of any biased selection experienced by the plan has an important effect on financial performance. Biased selection exists when, within a payment cell, Medicare beneficiaries who enroll in an HMO are either more likely or less likely to use services than those who do not enroll. In this case, the AAPCC payment received by the plan is biased either high or low relative to the enrollees' actual risk of incurring medical expenses. The data available for this study will not permit us to isolate the effects of each of these various factors, so our analysis of the plans' financial experience under the demonstration is primarily descriptive in nature.

Our examination of the revenues and expenses experienced by individual plans will consist of two major components. First, to gauge the overall financial performance of the plans under the demonstration, we will examine the total net revenue per enrollee, both on an annual basis for

1984 and for individual quarters in that year. Second, we will examine the components of total expenses in each plan. The major expense categories to be examined are institutional expenses, noninstitutional medical expenses, expenses for supplemental services, and administrative and other expenses. For each of these four categories, expenses per enrollee will be examined in each plan, both on an annual basis and for individual quarters in 1984.

3. Examination of Factors Associated With the Plans' Utilization and Financial Experience

The third major objective of the analysis is to examine the relationship between the plans' utilization and financial experience under the demonstration and (1) specific characteristics of the plans and the markets in which they operate, and (2) the plans' enrollment experiences. It is important to recognize that this analysis, like the analysis of the utilization and financial experience of individual plans, is essentially descriptive in nature. That is, while we may observe that plans with a specific characteristic tend to experience lower than average use rates or higher than average net revenues per enrollee, the data available for this study will not permit us to identify the causative factors underlying such differences.

Previous research on the relationship between the utilization and financial experience of HMOs and specific plan characteristics has focused primarily on comparing the relative performance of IPA-HMOs and PGP-HMOs. That research has found that, relative to the fee-for-service sector, IPAs have generally experienced higher service use rates and higher costs per enrollee than PGPs. A number of factors may have contributed to this

finding. For example, since closed panel PGPs are most attractive to persons without strong ties to a fee-for-service provider, and since the lack of such ties may be associated with either good health or a low preference for medical intervention, PGPs may be more likely than IPAs to experience favorable selection. In addition, IPAs have historically paid physicians on a fee-for-service basis, which creates incentives for over-utilization, while PGPs have paid physicians on a salary or capitation basis. However, our case studies of the plans participating in the demonstration reveal that this historical difference between IPAs and PGPs in the method of paying physicians is becoming less pronounced; some of the IPAs studied pay medical groups on a capitation basis and some capitate individual physicians directly. Given this shift by IPAs in the method of paying physicians, comparisons of the financial and utilization experience of PGPs and IPAs in the present study will be particularly important.

In addition to the distinction between IPAs and PGPs, plans vary by a number of other characteristics that are likely to affect their utilization and financial experience in the Medicare market. Among the specific characteristics we will examine are the age of the plan, enrollment levels and growth rates (total and Medicare), profit/nonprofit status, the nature of the utilization controls, the nature of the financial incentives facing providers and enrollees, the amount of peer interaction among physicians, and the nature of the quality assurance mechanisms. We will also examine a number of factors that affect conditions in the local health care market, including the presence of other demonstration HMOs, the physician-population ratio, hospital occupancy rates, and percent of the population covered by Medicare.

Several hypotheses will be examined regarding the relationships between the utilization/financial experience of the plans and HMO and market area characteristics. The primary hypotheses are the following:

- o IPAs will experience higher hospital use rates and lower net revenues per enrollee than PGPs.
- o Plans which have strong financial incentives for enrollees and providers to constrain the use of services will experience lower hospital use rates and higher net revenues per enrollee than plans with weak or no financial incentives.
- o Plans with strong utilization controls will experience lower hospital use rates and higher net revenues per enrollee than plans with weak controls.
- o Plans which have been operating for a number of years will experience lower hospital use rates and higher net revenues per enrollee than younger plans.
- o Net revenues per enrollee will be lower in HMOs in market areas in which other demonstration plans are operating, due to the additional benefits required to attract enrollees.

In addition to these specific hypotheses, which have been specified on the basis of both prior research and our prior expectations, we will examine the relationship between utilization/financial experience and a variety of other HMO and market characteristics. Any relationships that are observed will form the basis for new hypotheses to be tested in subsequent components of the evaluation, particularly the full use and cost analysis based on individual-level data.

C. LIMITATIONS OF THIS STUDY

While this study provides the most comprehensive picture available to date on the utilization and financial experience of the HMOs participating in the Medicare Competition Demonstration, readers must be cautioned about some important limitations of our analysis. First, in order to

provide some evidence on the experiences of the plans in a timely manner, the analysis has been conducted prior to the availability of individual-level data. The analysis is therefore based entirely on aggregate data provided by the plans in a series of Quarterly Reports submitted to HCFA for 1984, which contain self-reported information on enrollment, utilization of services, and revenues and expenses for each plan. As noted in Chapter I, because of our reliance on plan-level data, the analyses to be conducted in this study are descriptive in nature. Demonstration impacts will be estimated in subsequent reports once individual-level data become available.

Another consequence of our reliance on plan-level data is that we will observe only mean use and cost levels for each plan and will not observe the underlying distribution of those variables. The distribution of costs for expensive services such as inpatient hospital care is likely to be highly skewed, with a large number of enrollees experiencing no hospital stays during our period of observation. The mean of such a distribution can be particularly sensitive to the presence of extreme values. Without individual-level data, it will not be possible to determine whether the mean costs for an HMO are distorted by an atypical number of cases with unusually large expenditures. If such distortion exists for a given HMO, the computed mean costs may not accurately reflect the costs that the plan would experience in the Medicare market over a longer period of time.

The plans included in our analysis began participating in the demonstration at dates ranging from August 1982 through June 1984. Therefore, the 1984 data employed in this study reflect the experiences of

plans at different stages of development, making comparative analyses and interpretations difficult. Furthermore, since most plans began enrolling demonstration clients in 1984, our data generally reflect the initial experiences of the plans in serving Medicare beneficiaries under risk contracts. For a variety of reasons, these initial experiences may not accurately predict HMO experience in the Medicare market over a longer period of time. For example, as the plans gain experience with Medicare beneficiaries, they may become more efficient in delivering services to this segment of the population and more effective at constraining utilization. Furthermore, the nature and extent of any biased selection of enrollees into the plans may change over time as a larger group of Medicare beneficiaries is enrolled.

Another limitation of this study concerns our investigation of the associations between HMO utilization/financial experience and specific plan and market area characteristics. An inherent limitation of this analysis is that there are a large number of characteristics that may influence the outcomes of interest but a relatively small number of HMOs available for the analysis (approximately 20). Therefore, a multivariate analysis will not be possible. Instead, our analysis will consist of a series of univariate comparisons in which mean use rates (or net revenues per enrollee) are compared for groups of HMOs classified by the characteristics of interest. While this will provide some useful insights into the factors that are associated with the plans' utilization and financial experience, in the absence of a multivariate analysis it will not be possible to identify the factors that are most important in explaining those outcomes.

Finally, one reservation about the interpretation of the information presented in this report should be noted. Under the demonstration, plans were permitted to retain any surpluses they generated. However, under the TEFRA regulations, these plans and new entrants are permitted to earn a reasonable profit/surplus, but any surplus which exceeds the allowed level must be returned to beneficiaries, through more generous benefits or reduced cost-sharing, or returned to HCFA. Thus, the experience reported here should be expected to differ from that which may occur under the TEFRA regulations--particularly with respect to the financial performance of the demonstration plans.

III. THE DATA

Much of the data used for the analysis presented in this report was obtained from Quarterly Administrative Reports provided by the demonstration HMOs. The Quarterly Reports include information on enrollment, utilization of medical services, revenues and expenses, marketing, plan staffing and capacity, grievances, and quality assurance. These data have been supplemented by additional data on the characteristics of the plans and the markets in which they operate. Information on plan characteristics was obtained primarily from data collected in the initial site visit interviews, while information on market area characteristics was obtained from existing secondary data sources. Below, we first describe each of these data sources and then discuss their major limitations.

A. OVERVIEW OF DATA SOURCES

1. The Quarterly Reports

The Quarterly Reports provide information regarding enrollment, utilization of medical services, and revenues and expenses for each plan. The analysis is based on reports submitted for quarters beginning with the first quarter of 1984 (or plan startup, whichever is later) through the fourth quarter of 1984. Among the data available for each plan are the following:

- o Enrollment. Included is the total membership of the plan, the number of Medicare beneficiaries enrolled in the demonstration, the number of Medicare beneficiaries covered under cost-reimbursement contracts, and the number of Medicaid beneficiaries who are not also eligible for Medicare. For each of these categories of enrollees, the plans were asked to provide both a simple count of the number of persons covered and the total

number of covered months. Additional information on the Medicare demonstration enrollees includes the distribution across AAPCC rate cells, the number of disenrollees, and the number of deaths.

- o Use of Services. For both the total membership and the demonstration enrollees, information is available on the number of hospital days and discharges, SNF days and discharges, home health visits, ambulatory encounters, emergency room visits, audiology visits, hearing aids dispensed, eye examinations, eyeglasses dispensed, outpatient prescriptions, and dental office visits.
- o Revenues. For both the total membership and the demonstration enrollees, total revenues are classified by source as follows: premiums, copayments and deductibles, payments for services provided on a fee-for-service basis, payments from HCFA for services provided to Medicare beneficiaries (broken down into risk-based and cost-reimbursement, if applicable), payments from a state Medicaid agency, interest, income from coordination of benefits, insurance recoveries, and other revenue.
- o Medical Expenses. The expenses incurred in the delivery of medical services for both the total membership and the demonstration enrollees are classified according to whether those services are provided in-house or provided elsewhere. Expenses for services provided in-house are further classified as either (1) compensation and fringe benefits to personnel engaged in or in direct support of the delivery of health services or (2) all other expenses, where the latter includes the costs of occupancy, lab and x-ray, malpractice insurance, and supplies. Compensation and fringe benefits are further classified as physician salaries, physician capitation payments, physician fee-for-service payments, and nonphysician compensation. Expenses for services provided elsewhere are broken down into the following components: referrals, emergency services, out-of-area services, and other services.
- o Institutional Expenses. For both the total membership and the demonstration enrollees, institutional expenses are classified as either inpatient hospital or other institutional expenses. Inpatient hospital expenses include all costs incurred for routine and ancillary services provided for enrollees while confined to an acute care hospital. Other institutional expenses include the costs of using skilled nursing and intermediate care facilities.

- o Expenses for Additional Services. For both the total membership and the demonstration enrollees, total expenses for additional services as classified by source as follows: dental care, refractions and eyeglasses, audiology visits and hearing aids, outpatient prescription drugs, and other nonmedical services.
- o Administrative and Other Expenses. This category includes expenses associated with administration, marketing, member services, interest on debt, depreciation and amortization, and re-insurance. Expenses are reported for the total membership and are also allocated to the Medicare demonstration enrollees.

The expense data in the Quarterly Reports do not provide a complete separation between the plans' costs of providing the standard package of Part A and Part B Medicare benefits and their costs of providing supplemental benefits to attract enrollees. The costs of many supplemental benefits are included in Medical Expenses or Institutional Expenses. These include the costs of any reduction or elimination of patient cost-sharing for standard Medicare services as well as the cost of additional services such as preventive care. Therefore, the category labeled Expenses for Additional Services in the Quarterly Reports does not include the full range of supplemental benefits offered.

There are two allocation issues relevant to the Quarterly Report data. The first pertains to the reporting of the use and cost data associated with a stay in an institution that spans two or more quarters. In such a case, the plans were instructed to report all the information associated with the stay in the quarter in which the discharge occurred. For example, if an enrollee is admitted to a hospital in the first quarter and discharged in the second quarter, the total days of care and the total expenses associated with the stay are reported in the second quarter.

The second allocation issue pertains to the requirement that each data element be reported both for the total plan membership and for the Medicare demonstration enrollees separately. For some data elements, such as the utilization of specific services, plans may have been able to obtain information on the demonstration enrollees directly from their records. However, in the case of certain expenses, such as physician salaries and administrative costs, the portion attributable to the demonstration enrollees must be estimated by the plans on the basis of some allocation rule. While the plans were asked to report the basis on which such allocations were made, that request was ignored by many plans. This is an important limitation of the data that is discussed further below.

Of the 27 HMOs which participated in the demonstration, 21 submitted at least one Quarterly Report in 1984 that included some utilization or financial data.¹ The analysis described in this report will include those 21 plans for which data are available. Table III.1 summarizes the plans which are included and the number of Quarterly Reports available for each. Two of the plans to be included -- AV-MED and IMC -- maintain operations in more than one market area, while each of the remaining 19 plans serves a single market area. AV-MED maintains operations in two distinct markets (South Florida and Tampa Bay), while IMC maintains operations in three distinct markets (South Florida, Tampa Bay, and Palm Beach). As discussed below in Chapter IV, it will be useful for many analytic purposes to treat these distinct market areas for AV-MED and

¹In general, the plans for which data were not available began operations in late 1984 or, in one case, early 1985.

TABLE III.1
QUARTERLY REPORT DATA BY PLAN

HMO	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Fallon Community Health Plan	X	X	X	X
Comprehensive American Care ¹	X	X	X	X
AV-MED: South Florida ²	X	X		X
Tampa Bay ²	X	X		X
Group Health Plan of SE Michigan	X	X	X	X
Genesee Valley Group Health Association	X	X	X	X
Health Care Network	X	X	X	X
United Health Plan	X	X	X	
HealthPlus of MI (Genesee Health Plan)	X	X	X	
Delmarva	No	X	X	
South Florida Group Health	No	X	X	X
Metro Health	X	X	X	X
Family Health Program	X	X	X	X
Medical West	X	X	X	X
Medical East	X	X	X	X
Healthway Community Health Plan	X	X	X	X
IMC: South Florida ³	X	X	X	X
Tampa Bay ³	X	X	X	X
Palm Beach ³	X	X	X	X
HealthAmerica (Health Care of Proward)	X	X	X	X

TABLE III.1 (continued)

HMO	Quarter 1	Quarter 2	Quarter 3	Quarter 4
ChoiceCare	No	X	X	X
Central Massachusetts ⁴	X	X	X	X
Crossroads	No	X	X	X
Health Ohio (Marion)	No	X	X	X

X: Plans that have sent a Quarterly Report (data has been included in analysis file).

No: Plans that were not operational, or were only in Phase I of the demonstration.

¹Comprehensive American Care (CAC) did not provide quarterly revenue and expense data, but instead provided annual data in its fourth quarter report.

²AV-MED provides separate estimates for its South Florida and Tampa Bay locations. Utilization data were not available for the second quarter for either location.

³International Medical Centers (IMC) submits a separate report for each of its three locations: (1) Data and Broward Counties, (2) Palm Beach, and (3) Tampa Bay.

⁴Data on expenses were not available for the first quarter for Central Massachusetts.

IMC as separate observations or "plans". Doing so results in a total of 24 plans to be included in the analysis.¹

2. The Initial Site Visits

One of the objectives of this study is to determine whether there are specific characteristics of the HMOs that are associated with utilization rates and financial performance under the demonstration. Information on the characteristics of each plan was obtained primarily from data collected in the initial implementation site visit interviews. Initial site visits were made to each plan in order to obtain information on the history, organizational structure, marketing strategies, quality assurance mechanisms, and operating experiences of the HMOs during the initial implementation of the demonstration. During these site visits, interviews were conducted with various HMO staff, including the executive director, the medical director, and the chief financial officer. Until early 1985, periodic telephone follow-ups to each plan were undertaken to collect additional information and to determine how the HMOs had evolved over time.

For each plan, the data collected in the initial site visits and telephone follow-ups provide information on the key characteristics to be examined in this study, which include the following:

- o Age of the plan
- o Federal qualification status
- o Organizational form (group, staff, IPA, etc.)
- o Chain affiliation

¹The total of 24 "plans" consists of the two distinct markets for AV-MED, the three distinct markets for IMC, and the remaining 19 HMOs for which data are available and which each operate in a single market.

- o Profit/nonprofit status
- o Medical group financial incentives
- o Patient financial incentives
- o HMO financial incentives
- o Management decision-making process
- o Peer interaction
- o Type of quality assurance mechanism
- o Type of utilization review mechanism
- o Benefit package offered
- o Premium charged
- o Length of open enrollment period

Additional information on the plans, such as detailed information on plan enrollment, was obtained from the Quarterly Reports.

3. Existing Secondary Data Sources

In addition to examining the association between various HMO characteristics and the plans' utilization and financial experience under the demonstration, we also examine the importance of local market area characteristics. Information on local market characteristics has been obtained from two existing secondary data sources: the Area Resource File and the ASPE Private Sector Initiatives Market Area Resource File.

a. The Area Resource File. The primary source of data on the market areas in which the plans are operating is the Area Resource File (ARF), which is maintained by the Bureau of Health Professions. The basic geographic unit in the ARF is the county. Since the market areas of most

plans consist of more than a single county, each market area variable was defined as a weighted average of the values assumed by the counties in a plan's market. For each plan, the weights used in this calculation represent the distribution of demonstration enrollees across the counties in the plan's market area as of December 31, 1984.

The key market area characteristics obtained from the ARF for this study, and the most recent year for which those data are available, are:

- o Average Medicare Part A and Part B reimbursement in 1980
- o Number of physicians per 100,000 residents in 1980
- o Percent of the population covered by Medicare in 1980
- o Percent of the population that is nonwhite in 1980
- o Percent of the population below the poverty line in 1979
- o Population per square mile in 1975
- o Hospital occupancy rate in 1982
- o Inpatient days per 1,000 Medicare beneficiaries in 1982

b. The Private Sector Initiatives File. An additional source of data on the market areas in which HMOs are operating is the Private Sector Initiatives Market Area Resource File created by Lewin and Associates under contract to DHHS/ASPE. The basic geographic unit in this file is the SMSA; therefore, data are not available for two of the plans included in our analysis that are not located in an SMSA. The file is used in this study to provide more detailed information than is available in the ARF on the degree of competition in the local health care market. The file contains detailed information on the development of prepaid health plans, health care coalitions, and multi-employer private utilization review programs. Among the specific variables used in this study are the following:

- o Number of group or staff model HMOs and their total enrollment in 1980.
- o Number of IPA-HMOs and their total enrollment in 1980
- o Presence of a health care coalition in 1980
- o Presence of a private utilization review program 1980

B. LIMITATIONS OF THE DATA

Much of the data used for the analyses conducted in this study are from Quarterly Administrative Reports provided by the demonstration plans. These reports are the source of data on enrollments, utilization of services, and revenues and expenses for each plan. In Chapter II, we discussed some general limitations of this study associated with our reliance on plan-level rather than individual-level data. In particular, we noted that the basic objectives of this report are not to estimate demonstration impacts, but rather are limited to an examination of some preliminary, descriptive evidence on utilization rates and revenues and expenses experienced by the demonstration plans. In this section, we discuss some of the specific limitations of the data sources used in the analysis.

With respect to the Quarterly Administrative Reports, several limitations of the data should be noted:

- o Utilization rates are computed for each plan using self-reported data on the quantity of services used by enrollees and on the number of person-months of enrollment. In general, there are no independent sources of data to validate the use rates computed from these self-reported data. In the case of hospital services, a limited degree of confirmation can be achieved by comparing our computed use rates to values reported directly by the plans during the course of site visits and informal telephone contacts. However, this does not represent true validation since in all cases we are limited to self-reported data from the plans.

- o The financial data are taken from unaudited financial statements and are based upon cost accounting assumptions which may vary by plan. For Federally qualified plans, the process of reporting financial data is somewhat standardized in order to meet the information needs of the Office of HMOs, HCFA, DHHS. However, the methods of allocating expenses to the Medicare demonstration enrollees for other than health care service-related expenses is necessarily arbitrary. Furthermore, each of the plans varies in the sophistication of its accounting system and its ability to capture expenses when they accrue versus when they actually occur. These factors could make comparisons across plans problematic and might produce different results than those that would be obtained if uniform accounting practices had been available to report the data for each plan.
- o For some plans, reports are missing for at least one quarter in 1984 (see Table III.1 above for quarterly report availability by plan). In some cases, the reason for a missing report is that the plan did not become operational until the second quarter of 1984, while in other cases an operational plan failed to submit a report. In each of these cases, data from the available reports were used to project annual figures.
- o The date at which plans included in the analysis began enrolling demonstration clients ranges from August 1982 to June 1984. (The startup date for each plan is provided below in Chapter IV). Thus, the plans were at different stages of their experience with the demonstration for the period covered by the data analyzed in this report, making comparative analyses and interpretations difficult.
- o On some of the submitted reports, individual data elements are either missing or inconsistent with other information provided in the report. For example, while all plans provided data on the use of hospital services, utilization statistics for other services are missing on some reports. (See Table III.2 and III.3 for a summary of the data elements available for each plan).

These limitations of the Quarterly Report data are discussed in greater detail in Chapter IV, where we present and discuss our empirical findings.

Site-visit interviews are another important source of data for this analysis. Data collected on-site from the plans are used to provide

information on the plans' financial and organizational characteristics. These data represent self-reported and not readily verifiable accounts of plan characteristics. In addition, much of the information obtained relied upon interviewees' recollections of events and knowledge of corporate practices and operational issues and experiences. It is reasonable to believe that, on occasion, important pieces of information have been omitted. Although we tried to mitigate against this by overlapping questions with various respondents, by obtaining written documentation whenever available, and by requesting that plans' review our draft case study reports, it is possible that some characteristics were misreported or misinterpreted from the data.

TABLE III.2

AVAILABILITY OF ENROLLMENT AND UTILIZATION DATA FROM THE QUARTERLY REPORTS BY PLAN

Plan	Number of Quarterly Reports Submitted	Number of Quarters in Which Data Element is Reported for the Plan's Medicare Enrollment														
		Enrollment	Cumulative Member Months	Hospital Days	Hospital Discharges	SNF Discharges	SNF Days	HHA Visits	Ambulatory Encounters	Emergency Room Visits	Hearing Exams	Hearing Aids	Refractions	Eyeglasses Dispensed	Dental Visits	Outpatient Prescriptions
1-MED																
South Florida	3	3	3	2	2	1	1	2	2	2	2	2	2	2	2	2
Tampa Bay	3	3	3	2	2	1	1	2	2	2	2	2	2	2	2	2
IC																
Health Care of Broward	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
South Florida Group Health	3	3	3	3	3	2	2	0	3	3	3	3	3	3	3	3
IC																
South Florida	4	4	0	4	4	4	4	4	4	4	4	4	4	4	0	4
Palm Beach	4	4	0	4	4	4	4	4	4	4	4	4	4	4	0	4
Tampa Bay	4	4	0	4	4	4	4	4	4	4	4	4	4	4	0	4
Wellthway Medical Plan	4	4	4	4	4	4	4	2	4	4	1	3	4	4	4	4
Medical East Health Plan	4	4	4	3	3	3	3	3	4	4	4	4	4	4	4	4
Central Massachusetts	4	4	4	4	4	0	0	0	4	4	0	0	0	0	0	0
Palme Community Health	4	4	4	4	2	3	4	2	0	4	4	4	3	4	4	4
Medical West Health Plan	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Wellthy Health Program	4	4	4	4	4	4	4	4	4	0	4	4	3	1	3	4
United Health Plan	3	3	3	3	3	2	2	3	3	3	2	2	3	3	3	3
Health Care Network	4	4	4	4	4	4	4	3	0	1	1	1	1	1	1	1
Group Health Plan of S.E. Michigan	4	4	4	4	4	4	4	4	4	4	1	4	4	4	4	4
Metropolitan Health Plan	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Reserve	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
HealthPlus of Michigan	3	3	3	3	3	3	3	3	3	3	0	3	0	0	0	3

le III.2 (continued)

	Number of Quarterly Reports Submitted	Number of Quarters in Which Data Element Is Reported for the Plan's Medicare Enrollment														
		Enrollment	Cumulative Member Months	Hospital Days	Hospital Discharges	SNF Discharges	SNF Days	HHA Visits	Ambulatory Encounters	Emergency Room Visits	Hearing Exams	Hearing Aids	Refractions	Eye-glasses Dispensed	Dental Visits	Outpatient Prescriptions
Essee Valley Group Health Association	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	
Essee Valley Group Health Association ¹	3	3	3	3	3	3	3	0	3	0	3	0	0	3	3	
Essee Valley Group Health Association (Health Ohio) ¹	3	3	3	3	0	0	0	0	3	0	3	3	3	3	0	
Essee Valley Group Health Association Essee Valley Group Health Association ¹	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

operational during the first quarter.

TABLE III.3

AVAILABILITY OF REVENUE AND EXPENSE DATA FROM THE QUARTERLY REPORTS BY PLAN

Plan	Number of Quarters in Which Data Element Is Reported for the Plan's Medicare Enrollment						
	Total Revenue	HCFA Capitation Payments	Total Expenses	Medical Expenses	Institutional Expenses	Supplemental Expenses	Administrative Expenses
AY-MED							
South Florida	3	3	3	3	3	3	3
Tampa Bay	3	3	3	3	3	3	3
CAC ¹	4	1	1	1	1	1	1
Health Care of Broward	4	4	4	4	4	4	4
South Florida Group Health	3	3	3	3	3	1	3
IMC							
South Floria	4	4	4	4	4	4	4
Palm Beach	4	4	4	4	4	4	4
Tampa Bay	4	4	4	4	4	4	4
Healthway Medical Plan	4	4	4	4	4	4	4
Medical East Health Plan	4	4	4	4	4	4	4
Central Massachusetts	4	4	3	0	0	0	0
Fallon Community Health	4	0	4	0	4	0	4
Medical West Health Plan	4	4	4	4	4	4	4
Family Health Program	4	4	4	4	4	4	4
United Health Plan	3	3	3	3	3	3	3
Health Care Network	4	4	4	4	4	4	4
Group Health Plan of S.E. Michigan	4	4	4	4	4	4	4
Metropolitan Health Plan	4	4	4	4	4	4	4
Delmarva	2	2	2	2	2	2	2
HealthPlus of Michigan	3	3	3	3	3	3	3

Table III.3 (continued)

Plan	Number of Quarters in Which Data Element Is Reported for the Plan's Medicare Enrollment					
	Total Revenue	HCFA Capitation Payments	Total Expenses	Medical Expenses	Institutional Expenses	Supplemental Expenses
ennessee Valley Group Health Association	4	4	4	4	4	4
ChoiceCare ²	3	3	3	3	3	3
Merion (Health Ohio) ²	3	3	3	3	3	3
Crossroads ²	3	3	3	3	3	3

¹CAC sent annual revenues and expenses only.

²Not operational during the first quarter.

IV. ANALYSIS OF THE USE AND COST OF SERVICES AND HMO FINANCIAL EXPERIENCE

In this chapter, we present the results of our preliminary, descriptive analysis of the use and cost of services and financial experience of the HMOs participating in the Medicare Competition Demonstration. We have included in the analysis all demonstration plans that submitted at least one quarterly report in 1984 that contained some utilization or financial data. This results in 21 of the 27 demonstration HMOs being included in this study.¹ As discussed in the previous chapter, one of these plans (AV-MED) maintains operations in two distinct market areas while another plan (IMC) maintains operations in three distinct markets. Each of the remaining 19 plans to be included operates in a single market area.

For AV-MED and IMC, there is some question as to how their operations in separate market areas should be treated in our analysis. For example, should IMC's operations in Dade-Broward counties, Palm Beach, and Tampa Bay be treated as three distinct observations or as a single observation? An argument for treating them as three distinct observations is that they operate in market areas which differ in important ways that could affect their utilization and financial experience under the demonstration. For example, the three separate locations in which IMC operates differ with respect to AAPCC capitation rates as well as various other characteristics reflecting demand and supply conditions in the local health care market. (Selected characteristics of all the demonstration

¹A description of all 27 of the Medicare Competition Demonstration HMOs is provided in Langwell et al., First Annual Report on the Evaluation of the Medicare Competition Demonstration which is available from HCFA.

market areas are presented below). In addition, there may be important differences across IMC's three locations in the characteristics of the beneficiaries enrolled. These considerations suggest that treating IMC's three separate locations (and AV-MED's two separate locations) as distinct observations would yield greater information on the range of plan experiences to be expected as additional HMOs enter the risk-based Medicare market nationally. Furthermore, this approach is particularly appropriate for several specific components of our analysis, including (1) comparisons of hospital use rates experienced by the plans to prevailing use rates in the fee-for-service sector of the local market area, and (2) analysis of the relationship between HMO utilization and financial experience under the demonstration and the characteristics of the market areas in which they operate.

On the other hand, however, it is clear that the separate locations for IMC and those for AV-MED are not in fact independent, since they share the same top management and many of the same organizational and financial characteristics. In addition, AV-MED and IMC may have initially subsidized expansion in their secondary market locations (i.e., the Tampa Bay market for AV-MED, and the Tampa Bay and Palm Beach markets for IMC) with profits from their primary operations in Dade and Broward counties. Thus, their experiences in these secondary market areas may differ significantly from what completely independent plans would achieve in those markets. These considerations suggest that for some analyses, useful insights may be gained by combining IMC's three separate market areas into a single observation, and similarly for AV-MED's two market areas.

Although there are advantages and disadvantages to each of the two approaches we have considered for treating the separate market areas of IMC and AV-MFD, we believe, on balance, that greater insights can be gained by treating these separate locations as distinct observations, and have therefore adopted this as our primary approach. This results in a total of 24 observations or "plans" to be included in the analysis. However, we have also tested the sensitivity of our findings to that assumption by conducting major portions of the analysis under the alternative approach as well. Results of that sensitivity analysis are discussed below, and tables presenting our key findings under the alternative approach are presented in Appendix A.

The remainder of this chapter consists of four sections. The first section provides some background information on the characteristics of the plans, the market areas in which they operate, and the benefit packages offered to enrollees. This background information on the plans will provide a general context for interpreting our findings on their utilization and financial experience under the demonstration. In addition, for analytic purposes, it is important to distinguish the plans by these various characteristics to determine whether and how such characteristics influence the outcome measures to be examined in this study. The next section will examine the enrollment experience of the demonstration plans, including enrollment levels and growth rates, demographic characteristics of enrollees, and disenrollment rates. With this information as background for the analysis, the final two sections will present the major components of this study--the analysis of the plans' utilization and financial experience.

In the initial set of tables presented in this chapter, in which basic characteristics of the plans and their market areas are given, individual plans will be identified by name. However, since much of the utilization and financial data obtained from the Quarterly Reports are considered confidential, subsequent tables which present such data will identify plans by letter code rather than by name. Furthermore, the order in which individual plans appear in the tables will be changed.

A. THE MEDICARE COMPETITION DEMONSTRATION PLANS

With the separate market areas of IMC and AV-MFD treated as distinct plans, there are a total of 24 plans to be included in this study. These 24 plans represent a wide range of characteristics. In this section, we examine the various characteristics of the plans, including (1) their basic characteristics, (2) their organizational and financial characteristics, (3) the characteristics of the market areas in which they operate, and (4) the characteristics of the benefit packages offered to enrollees. This will provide useful background for our descriptive analysis of the plans' utilization and financial experience presented below.

1. Basic Plan Characteristics

The basic characteristics of the 24 plans included in this study are shown in Table IV.1. Of the 24 plans, ten are IPAs, three are group model HMOs, seven are staff model HMOs, and four are mixed-mode models. The majority of the plans (88 percent) are federally qualified; only three do not have federal qualification. This percentage is a much higher proportion than the 59 percent of all U.S. HMOs that have federal qualification. Additionally, most plans are not-for-profit organizations

(75 percent). There is a more even distribution among the plans with respect to organizational affiliations. Of the 24 plans, 14 are independent while 10 have some form of affiliation. The majority of these affiliations (7) are with the local Blue Cross Blue Shield organizations.

In considering the relative maturity of the plans, there is some ambiguity regarding the appropriate classification of the secondary market locations of plans (i.e., the Tampa Bay market for AV-MED, and the Tampa Bay and Palm Beach markets for IMC). On the one hand, these HMOs have only recently begun operating in secondary locations, so there is some basis for classifying these operations as relatively new plans. On the other hand however, these operations clearly benefit from the prior experience and financial strength of the entire organization. Since we are interested in examining the associations between the plans' maturity and their utilization and financial experience, we have chosen to classify the secondary operations of AV-MED and IMC as having the same level of maturity as the primary operations of those plans. With plans classified in this manner, 17 have been in operation for longer than five years, while 7 have been in operation for five years or less.

Eleven of the plans had prior experience in providing services to Medicare beneficiaries. Among the plans which had previously enrolled Medicare beneficiaries, the vast majority did so through cost contracts with HCFA.

Each of the four geographic census regions are represented by several demonstration HMOs. In several market areas two or more demonstration plans competed for Medicare enrollees. Among these market areas are: Southern Florida, Central Massachusetts, Los Angeles, and

TABLE IV.1

BASIC CHARACTERISTICS OF MEDICARE COMPETITION 1980s

Health Plan	Location	Contract Start Date	Years in Operation	Federal Qualification	Profit Status	Chain Affiliation	HMO Model	Total Non-Medicare Enrollment ²	Prior Medicare Enrollments and Type
AY-MED: South Florida	Florida	December 1982	6	Yes	For-P	National Medical Enterprises ³	Traditional IPA	63,207	None
AY-MED: Tampa Bay		December 1983	6	Yes	For-P	National Medical Enterprises ³	Traditional IPA	4,941	None
Comprehensive American Care		November 1982	11	Yes	For-P	None	Staff	38,882	None
Health Care of Broward		February 1983	3	Yes	Non-P	Health America	Staff	14,775	Cost
South Florida Group Health		March 1984	4	Yes	Non-P	BCBS of Florida	Traditional IPA	9,833	None
IMC: South Florida		August 1982	8	Yes	For-P	None	Mixed	39,835	Cost/Risk
IMC: Tampa Bay		February 1984	8	Yes	For-P	None	Mixed	6,704	None
IMC: Palm Beach		January 1984	8	Yes	For-P	None	Mixed	2,335	None
Healthway Medical Plan	Massachusetts	January 1984	4	Yes	Non-P	Blue Cross of Mass.	Group	30,890	Cost
Medical East Health Plan		October 1983	2	Yes	Non-P	Blue Cross of Mass.	Staff	13,111	Cost
Central Massachusetts Health Plan		January 1984	6	No	Non-P	None	Traditional IPA	42,269	None
Fallon Community Health Plan		September 1983	7	Yes	Non-P	Blue Cross of Mass.	Group	49,789	Risk Demo
Medical West Health Plan		January 1984	6	Yes	Non-P	Blue Cross of Mass.	Staff	53,086	Cost
Family Health Program	Los Angeles	December 1983	24	Yes	Non-P	None	Staff	75,708	Cost
United Health Plan		May 1984	17	Yes	Non-P	None	Mixed	51,399	Cost
Health Care Network ¹	Detroit	May 1984	3	Yes	Non-P	Blue Cross of Michigan	Network IPA	45,841	None

Table IV.1 (continued)

Health Plan	Location	Contract Start Date	Years In Operation	Federal Qualification	Profit Status	Chain Affiliation	HMO Model	Total ² Non-Medicare Enrollment	Prior Medicare Enrollments and Type
Metropolitan Health Plan	Indianapolis	January 1984	10	Yes	Non-P ^a	None	Staff	67,379	Cost
Delmarva Health Care Plan	Eastern Maryland	March 1984	3	No	Non-P	None	Traditional IPA	990	None
Genesee Health Care Plan	Flint, MI	October 1983	5	Yes	Non-P ^a	None	Traditional IPA	73,111	None
Genesee Valley Group Health Assn.	Rochester, NY	December 1983	11	Yes	Non-P	BCBS of Rochester	Group	34,357	None
Cholcecare, Inc.	Cincinnati, OH	April 1984	6	No	Non-P	None	Traditional IPA	36,712	Cost
Marion (Health Ohio)	Central, OH	June 1984	8	Yes	Non-P	None	Traditional IPA	15,074	Cost
Crossroads	New Jersey	May 1984	6	Yes	Non-P	None	Traditional IPA	17,205	None

^aMetrolHealth converted to a for-profit corporation in February 1985.

^aGenesee Health is in the process of converting to for-profit.

¹Health Care Network officially became operational in February 1984; however, its initial marketing enrollment activities did not begin until May 1984.

²For health plans that did not send fourth quarter reports - Genesee Health Care, Family Health Plan, Delmarva, and Watts Health Plan - the figure given is total non-Medicare enrollment as of September 31, 1984.

³Av-med became part of National Medical Enterprises as of Dec 31, 1984.

Detroit. The competition is most intense in the south Florida market where five HMOs actively marketed and enrolled Medicare beneficiaries under the demonstration.

2. Organizational and Financial Characteristics

In addition to the basic characteristics discussed above, the demonstration plans vary by several organizational and financial characteristics which may have influenced the operation of the Medicare demonstrations (See Table IV.2)¹. The organizational characteristics that are expected to be important determinants of the use and cost of services and HMO financial performance include:

- o Decisionmaking. The process through which the demonstration is implemented and its success in achieving its objectives may be related to the degree to which decisionmaking is centralized. A single owner/director will have greater authority to define and direct the demonstration; on the other hand, a decentralized management team may have more knowledge and a broader overall perspective on the demonstration. While it is not evident a priori that centralized decisionmaking will have a consistent effect on outcome, we will examine this issue by analyzing the distribution of all demonstration plans across the following categories:
 - One owner/sole decisionmaking
 - Small group of top management
 - Management staff by consensus
- o Quality assurance/peer interaction. The quality assurance mechanisms and the nature of peer interaction within an HMO affects the patterns of medical services provision. Physicians who face financial incentives to

¹The organizational and financial characteristics of the demonstration HMOs are discussed in detail in Langwell et al., Report on the Implementation of the Medicare Competition Demonstrations which is available from HCFA.

TABLE IV.2

ORGANIZATIONAL AND FINANCIAL CHARACTERISTICS
OF MEDICARE COMPETITION HMOs

Health Plan	Decisionmaking	Peer Interaction	Quality Assurance Mechanisms	Utilization Controls	Financial Incentives		
					Patient	HMO	Medical Group
AV-MED: South Florida	One owner: Sole decision-maker	Medium	Low	Strong	Medium	Strong	Strong
Tampa Bay	One owner: Sole decision-maker	Medium	Low	Strong	Medium	Strong	Strong
Comprehensive American Care	One owner: Sole decision-maker	Medium	Medium	Strong	Weak	Medium	Medium
Health Care of Broward	Small group of top management	Medium	Low	Strong	Weak	Weak	Medium
South Florida Group Health	Small group of top management	Medium	Medium	Strong	Medium	Weak	Strong
INC: South Florida	Small group of top management	Medium	High	Strong	Weak	Medium	Strong
Tampa Bay	Small group of top management	Medium	High	Strong	Weak	Medium	Strong
Palm Beach	Small group of top management	Medium	High	Strong	Weak	Medium	Strong
Healthway Medical Plan	Management staff by consensus	High	Medium	Strong	Medium	Weak	Strong
Medical East Health Plan	Management staff by consensus	High	High	Medium	Weak	Weak	Weak
Central Massachusetts Health Plan	Small group of top management	Medium	Low	Medium	Medium	Weak	Weak
Fallon Community Health Plan	Executive Director/ One person	High	Medium	Strong	Weak	Medium	Strong
Medical West Health Plan	Small group of top management	High	Low	Medium	Medium	Weak	Weak
Family Health Program	Small group of top management	Medium	Medium	Strong	Medium	Medium	Weak

Table IV.2 (continued)

Health Plan	Decisionmaking	Peer Interaction	Quality Assurance Mechanisms	Utilization Controls	Financial Incentives		
					Patient	HMO	Medical Group
United Health Plan	Small group of top management	High	Medium	Strong	Medium	Weak	Strong (group) Weak (staff)
Health Care Network	Management staff by consensus	High	Medium	Strong	Strong	Weak	Medium
Group Health Plan of Southeast Michigan	Executive Director/ One Person	High	High	Strong	Weak	Weak	Medium
Metropolitan Health Plan	Management staff by consensus	Medium	Medium	Medium	Medium	Weak	Weak
DeMarva Health Care Plan	Small group of top management	Medium	Medium	Medium	Weak	Weak	Strong
Genesee Health Care Plan	Small group of top management	Medium	Medium	Strong	Medium	Weak	Strong
Genesee Valley Group Health Assn.	Small group of top management	High	Low	Medium	Medium	Weak	Weak
ChoiceCare, Inc.	Management staff by consensus	Medium	Medium	Medium	Strong	Weak	Weak
Marion (Health Ohio)	Management staff by consensus	Medium	Medium	Strong	Weak	Weak	Strong
Crossroads	Small group of top management	Medium	Medium	Strong	Medium	Weak	Strong

increase services provided may not do so if there are well-developed mechanisms for quality assurance and/or substantial peer interaction. On the other hand, physicians facing financial incentives to curtail services provision will be more likely to provide the necessary services when quality assurance mechanisms and/or peer interaction are strong elements of the HMO.

For our purposes, we define peer interaction levels based on the following characteristics: (1) participation in medical school/residency teaching programs; (2) internal CME/seminars on a regular basis; and (3) regular meetings of physicians. An HMO with "High" peer interaction has 3 of these elements; "Medium" peer interaction has 1 to 2 elements; "Low" peer interaction plans have none of these characteristics.

Quality assurance (QA) mechanisms include: (1) HMO Medical Director; (2) HMO subjected to external QA; (3) independent quality assurance program (QAP); and (4) Medical Group QAP. "High" QA is defined as all 4 characteristics present; "Medium" QA as 2 or 3 characteristics; and "Low" QA as 1 or none of these characteristics present.

- o Utilization controls. The effectiveness with which HMOs control utilization may have significant implications for the use and costs of services and, to a lesser degree, for patient satisfaction, quality of care, and other dimensions of plan performance. The plan characteristics which indicate the nature and extent of utilization controls include: (1) designation of primary care gatekeeper through whom all services must be cleared; (2) regular physician activity profiles; (3) prior authorization for non-emergency hospital admissions; (4) concurrent review of hospitalized patient records, including discharge planning. Plans were designated as having "Strong" UR if 4 of these characteristics are present; "Medium" UR if 2 or 3 are present; and "Weak" UR if 1 or none are present.
- o Financial Incentives. There are four actors facing financial incentives which affect decisions about services delivered at HMOs: (1) patients; (2) HMO management; (3) medical provider groups; and (4) individual physicians. Characterization of plans by the financial incentives present requires examination of financial arrangements for all four groups. Briefly, the following groupings were used to assign categories:

Patient Financial Incentives

"Strong," if copayments are required for hospital and ambulatory services

"Medium," if copayments are required for ambulatory services only.

"Weak," if no copayment.

HMO Financial Incentives

"Strong," if management profit-sharing and very limited stop-loss

"Medium," if management profit-sharing and generous stop-loss policy provisions

"Weak," if no profit-sharing and generous stop-loss policy provisions

Medical Group Financial Incentives

"Strong," if capitated and utilization target bonuses

"Medium," if capitated only or utilization target bonuses only.

"Weak," if physicians risk-sharing through hold-backs or assessments only.

Individual Physician Incentives. These incentives are important, but data are not available on this dimension uniformly across all of the demonstration sites.

Review of the demonstration plans indicates the following distribution by the above organizational and financial characteristics:

- o Of the 24 plans, 13 had a decisionmaking structure which includes a small group of top management; for 6 plans the management staff make decisions by reaching a consensus; and in 5 plans decisions are made primarily by one person.
- o With respect to quality of care indicators--peer interaction and quality assurance programs--the data suggest that peer interaction is a prevalent characteristic. All the plans had substantial peer interaction; none of the plans rated "Weak" in this category. The existence of quality assurance programs was also important: 13 plans had QAPs which we rated as "Medium," 5 were rated as "Strong" and 6 as "Weak".
- o Seventeen of the 24 plans had utilization review mechanisms which were rated as "Strong," the remaining 7 plans had "Medium" UR mechanisms, and none had "Weak" programs. This is not surprising since HMOs maintain their financial viability by constraining the over-

utilization of health services, and it was expected that plans with good utilization controls would be more likely to enter the Medicare market.

- o The financial incentives faced by the beneficiaries, the HMOs, and the medical groups reveal an interesting pattern. The majority of HMOs (67 percent) have "Weak" financial incentives; similarly, almost all of the plans had either "Weak" or "Medium" patient financial incentives. In contrast, however, many of the medical groups (54 percent)¹ faced "Strong" incentives incorporated into their financial arrangements with the plans. This finding is consistent with the need for the plans to control utilization of health services by working through physicians who actually determine much of the use of services.

3. Market Area Characteristics

Selected characteristics of the market areas in which the 24 plans operate are shown in Table IV.3. Included are total HMO market share, Medicare reimbursements, the availability of hospital and physician services, and the percent of the population covered by Medicare. The market area data are taken from the Health Resources and Services Administration, DHHS, Area Resource File (ARF), for the year 1983. Since the market areas of most plans consist of more than a single county, each market area variable was defined as a weighted average of the values assumed by the counties in a plan's market. For each plan, the weights used in this calculation represent the distribution of demonstration enrollees across counties in the plan's market as of December 31, 1984.

The share of the total population enrolled in HMOs varied substantially. Five plans operated in areas where less than two percent of

¹This includes the United Health Plan which has "strong" incentives for its group model component but "weak" incentives for its staff model component.

TABLE IV.3

SELECTED MARKET AREA CHARACTERISTICS OF THE
 MEDICARE COMPETITION DEMONSTRATION HMOs, 1982-83

Plan	Total HMO Market Share	Percent of Population Medicare	Average Medicare Reimbursement	Average Hospital Occupancy Rate	Physician per 100,0 Residents
All Plans					
Median	7.9	12.1	\$1,416	77	206
Mean	8.5	13.6	1,431	78	206
AV-MED: South Florida	7.9	16.5	1,715	74	232
AV-MED: Tampa Bay	1.9	25.4	1,057	74	146
CAC	7.9	14.1	1,881	77	267
Health Care of Broward	7.9	20.1	1,478	70	182
South Florida Group Health	7.9	14.1	1,880	77	267
IMC: Dade-Broward	7.9	17.4	1,657	73	220
IMC: Palm Beach	0.0	22.2	1,068	79	176
IMC: Tampa Bay	1.9	22.1	1,049	74	144
Healthway Medical Plan	10.7	10.7	1,325	84	156
Medical East Health Plan	18.7	12.1	1,495	84	286
Central Massachusetts	18.7	12.7	1,416	76	187
Fallon Community Health	10.7	12.7	1,416	76	187
Medical West Health	9.1	12.2	1,094	75	143
Family Health Program	27.7	9.1	1,774	67	214
United Health Plan	27.7	9.4	1,796	67	220
Health Care Network	9.6	9.6	1,753	82	206
Group Health Plan of Southeast Michigan	7.5	9.1	1,721	82	198

TABLE IV.3 (continued)

Plan	Total HMO Market Share	Percent of Population Medicare	Average Medicare Reimbursement	Average Hospital Occupancy Rate	Physician per 100,0 Residents
Metropolitan Health Plan	3.9	10.2	1,196	84	226
Delmarva Health Care Plan	0.6	17.3	944	87	285
Genesee Health Care Plan	9.0	8.1	1,630	75	161
Genesee Valley Group Health Association	9.6	11.1	1,181	90	245
Choicecare	3.4	11.3	1,147	84	223
Marion (Health Ohio)	1.1	10.2	999	68	129
Crossroads	2.3	11.2	1,370	79	251

NOTE: Total HMO market share was computed from data in Interstudy's 1983 National HMO Census on the number of HMO enrollees in each market and from data in the ARF on the market area's total population.

the population was enrolled in an HMO. Several plans served Los Angeles county where the HMO concept is well known with nearly 30 percent of the population enrolled in an HMO.

The percent of the population covered by Medicare ranged both above and below the national average of 10.6 percent, from a low of 8.1 percent to a high of 25.4 percent. The five plans in South Florida and one plan in Maryland's Eastern Shore operated in areas with some of the highest concentrations of Medicare beneficiaries in terms of percent of the population covered. The market areas for the other plans were not outliers in this sense, and tended to cluster around the national average.

Combined Medicare Part A and Part B average annual reimbursements taken from the 1983 Area Resource File are shown for the plans for the year 1982. Average reimbursement tended to be high, with 19 of the 24 plans in market areas having above national average (\$1,100) Medicare reimbursements. Those in less urban areas tended to have lower than average reimbursements.

Hospital and physician services were in abundant supply in nearly every plan's market area. Hospital occupancy rates ranged from a low of 67 percent for the plans in Los Angeles County, CA to a high of 90 percent for the plan in Rochester, NY. Rochester is a unique area with a complex regulatory environment and strict hospital planning activities which foster high hospital occupancy rates. Physician availability was also a common characteristic of the market areas, with 60 percent of the plans having above the national average of physicians per 100,000 population. The plans in relatively physician rich areas were those in Miami, FL and Boston, MA. Plans in relatively physician poor areas were those in Tampa, FL and Marion, OH.

4. Characteristics of the Benefit Packages Offered

Table IV.4 describes the benefits and cost-sharing provisions offered by the demonstration plans. All the plans offer standard Part A and Part B benefits. Additional benefits and provisions for reduced cost sharing offered to Medicare beneficiaries are considerable. Two plans offer high and low benefits options.

All of the plans offer free hospital care for at least 90 days. Skilled nursing facility care is free to beneficiaries in all but one of the plans, although most do have restrictions associated with this benefit (e.g., limit to 100 days per spell of illness). Sixteen plans require no copayments for physician office visits and preventive and diagnostic care.¹ Among the eight plans which require copayments for these services, the charges are nominal--between \$3 and \$5 per unit of service. It is noteworthy that all the plans treat preventive care in the same manner as other physician office visits. Thus, there is considerable incentive for patients to seek preventive care.

Four benefits which appear to be particularly of interest to plans in designing their benefits packages were prescription drugs, vision care, hearing care, and dental care. A breakdown of these benefits by plan reveals:

- o Prescription drug benefits are offered by all but one of the demonstration plans. Seven plans require no cost-sharing for drugs, although in one of these plans cost-sharing is required in the low option plan.

¹Of these, two plans required no copayment in their high option plans, but do require a copayment in the low option plans.

TABLE IV.4
BENEFITS, PREMIUMS AND CO-PAYMENTS BY HMO

HMO Plan	Premium (per month)	Standard Medicare Part A/B	Physician Office Visits/ Co-payment	Preventive Care/ Co-payment	Additional Hospital Benefit/ Co-payment	Additional SNF Benefit/ Co-payment	Prescription Drug Benefit/ Co-payment	Vision Care		Hearing Care		Dental Care/ Co-payment
		Benefits/ Co-payment	Exams/ Co-pay.	Glasses/ Co-pay.	Exam/ Co-pay.	Hearing Aid/ Co-payment						
Medicaid: South Florida	None	Covered	\$5.00	\$5.00	Free	Free/100 days per year	\$100 annual ded./\$400 maximum	\$15.00	Free/1 per year	\$5.00	Free/1 per year	Covered
Tampa Bay	None	Covered	\$5.00	\$5.00	Free	Free/100 days per year	\$100 annual ded./\$400 maximum	\$15.00	Free/1 per year	\$5.00	Free/1 per year	Covered
Comprehensive American Care	None	Covered	Free	Free	Free	Free	Free	Free	Free/1 per year	Free	Not covered	Covered
Health Care of Broward	\$20.00	Covered	Free	Free	Free	Free/100 days per spell of illness	\$3.00	Free	Free/1 per year	Free	Free	Covered
South Florida Group Health	\$14.00 ¹	Covered	\$3.00	\$5.00	Free	Free/100 days per spell of illness	\$50.00 ded., 80% covered	Not covered	Not covered	Not covered	Not covered	Not covered
Medicaid: South Florida	None	Covered	Free	Free	Free	Free/100 days	Free	Free	Free	Free	Free	Covered
Tampa Bay	None	Covered	Free	Free	Free	Free/100 days	Free	Free	Free	Free	Free	Covered
Palm Beach	None	Covered	Free	Free	Free	Free/100 days	Free	Free	Free	Free	Free	Covered
Waltham Medical Plan	\$24.75	Covered	Free	Free	Free	Free/100 days	\$3.00	Free	Not covered	Free	Not covered	Not covered
Waltham East Health Plan	\$15.00	Covered	Free	Free	Free	Free/100 days	\$2.00	Free	Not covered	Free	Not covered	Not covered
Waltham Massachusetts Health Plan	\$28.00	Covered	\$5.00	\$5.00	Free	Free/100 days per spell of illness	\$3.00	\$3.00	Not covered	\$5.00	Not covered	Limited Coverage
Waltham Community Health Plan	\$15.00	Covered	Free	Free	Free	Free/100 days per benefit period	Free	Free/1 per 2 year period	Free/1 per 2 year period	Free	Not covered	Not covered

Table IV.4 (continued)

Health Plan	Premium (per month)	Standard Medicare Part A/B Benefits/ Co-payment	Physician Office Visits/ Co-payment	Preventive Care/ Co-payment	Additional Hospital Benefit/ Co-payment	Additional SNF Benefit/ Co-payment	Prescription Drug Benefit/ Co-payment	Vision Care		Hearing Care		Dental Care/ Co-payment
								Exams/ Co-pay.	Glasses/ Co-pay.	Exam/ Co-pay.	Hearing Aid/ Co-payment	
Medical West Health Plan	\$25.00	Covered	Free	Free	Free	Free/100 days per benefit period	\$2.00	Free	Not covered	Free	Not covered	Not covered
Family Health Program Senior Plan	None	Covered	\$3.00	\$3.00	Free/90 days per benefit	Free/100 days per benefit period	\$2.00	Not covered	Not covered	\$3.00	Not covered	Not covered
Senior Plus	\$35.00	Covered	Free	Free	Free/90 days per benefit period	Free/100 days per benefit period	Free	Free	1 pair every 2 years	Free	Not covered	Covered
Shifted Health Plan High	\$29.75	Covered	Free	Free	Free	Free	\$2.00	Free	\$20 every 2 years	Free	Not covered	\$10.00
Low	None	Covered	\$4.00	\$4.00	Free	Free	\$4.00	Not covered	Not covered	\$4.00	Not covered	Not covered
Health Care Network	26.00	Covered	Free	Free	Free	Free for 730 days	Not covered	Not covered	Not covered	Not covered	Not covered	Not covered
Group Health Plan of Southeast Michigan	\$39.38	Covered	Free	Free	Free	Free/Unlimited	\$3.00	Free	Free	Free	Not covered	Covered
Metropolitan Health Plan	\$28.60	Covered	Free	Free	Free	Free/130 days	\$5.00	Free/1 every 2 years	1 pair every 2 years	Free	Not Covered	Cleaning & Exams Covered
Marine Health Care Plan	\$120.00/ year,	Covered	Free	Free	Free	Free/100 days per spell of illness	\$2.00 co-pay. after \$100 deductible	Not covered	Not covered	Not covered	Not covered	Not covered
Nease Health Care Plan	\$46.66	Covered	\$3.00	\$3.00	Free	Free for 730 days	Free	Not covered	Not covered	Free	Free	Not covered
Nease Valley Group Health Assn.	\$15.00	Covered	\$5.00	\$3.00	Free	Free/100 days per benefit period	50% of cost	\$3.00	50% of charges	\$3.00	Not covered	Not covered

TABLE IV.4 (continued)

Health Plan	Premium (per month)	Standard Medicare Part A/B	Physician Office Visits/	Preventive Care/	Additional Hospital Benefit/	Additional SNF Benefit/	Prescription Drug Benefit/	Vision Care		Hearing Care		Dental Care/
		Benefits/ Co-payment	Co-payment	Co-payment	Co-payment	Co-payment	Co-payment	Exams/ Co-pay	Glasses/ Co-pay	Exam/ Co-pay	Hearing Aid/ Co-payment	Co-Payment
Policare, Inc.	\$39.50	Covered	\$5.00	\$3.00	Free	Free/100 days per spell of illness	\$3.50	\$15.00	Not covered	\$15.00	Not covered	Covered
Prion (Health Ohio)	\$50.00	Covered	Free	Free	Free	Not Covered	\$3.00	Not Covered	Not Covered	Not Covered	Not Covered	Free
Prossroads	\$24	Covered	\$5.00	\$5/Exams 20% off co-payables	Free	Free	80% Covered after \$100 deductible	\$5	Not Covered	\$5	Not Covered	Not Covered

South Florida Group Health has recently dropped its premium requirement.

- o Refractions are offered by all but five plans--although the two plans that offer both high and low option benefits packages offer refraction examinations only in their high option plans. Among the nineteen plans which offer this benefit, thirteen require no cost sharing in at least one of their benefits packages (although some limit the number of examinations within a particular time period--e.g., once per year).
- o Eyeglasses are offered by thirteen plans in either a low or high option package. Eleven plans provide this benefit with no cost-sharing, although there are usually restrictions concerning the number of glasses which can be purchased within a particular time period.
- o Audiometric services are offered by all but four plans in at least one of their benefits packages, but hearing aids are available to Medicare enrollees in only seven plans (in either their high or low option package).
- o Some form of dental care is available to Medicare enrollees in fourteen plans. However, the range of services varies extensively among these plans. For example, some plans offer comprehensive benefits at no charge, including x-rays, cleanings, extractions, fillings, denture tooth replacements, etc.; other plans offer only limited services, primarily cleaning and exams.

As with physician office visits, most plans require some copayment for at least a subset of the services listed above. The range of these copayments is slightly wider than for physician office visits--usually between \$2 and \$15, although some plans have deductibles associated with these services or require patients to pay varying percentages of the cost.

In designing their benefits packages, most plans chose to add a wide range of additional services to augment their extended Part A and Part B services. Many plans provide extensive patient education, transportation services, nutrition counseling, etc., usually at no additional cost.

An important component of the plans' benefit packages is the premium charged. Five offered all benefits at no premium charge to the

Medicare enrollee; in addition, one plan recently dropped its premium requirement. Two additional plans offer their low option benefits package at no cost to the enrollee.

B. HMO ENROLLMENT EXPERIENCE

There was considerable variation across plans in both the number of Medicare beneficiaries attracted and in plans' success in keeping these clients once they had enrolled. In this section, we compare plans on the basis of enrollment levels and growth rates, demographic characteristics of enrollees, and disenrollment rates. This information on the plans' enrollment experiences will provide useful background for interpreting the evidence presented below on the use and cost of services and HMO financial performance.

The information presented in this section and all subsequent sections of the report was obtained from data provided in the Quarterly Reports. Since many of these data are considered confidential, we will protect the identity of the plans by identifying them by letter code (A,B,C, etc.) rather than by name. Furthermore, the order in which plans appear in the tables has been changed from that of the previous tables.

1. Enrollment Levels and Growth Rates

Of the 24 plans included in the analysis, 3 began enrolling demonstration beneficiaries in late 1982, 7 began in late 1983, and the remaining 14 began enrollments in the first half of 1984. ("Enrollment" date is defined as the first month for which enrollees were eligible to receive services). The earliest programs were all located in South Florida. In all but 5 plans, enrollments were allowed at any time. Of the

5 plans with restricted enrollment periods, 3 allowed beneficiaries to enroll during either of two 30 day intervals specified each year. The other 2 plans limited enrollment to one 45 day period per year.

Table IV.5 presents demonstration enrollments at the end of each quarter of 1984 by plan. The number of active enrollees as of December 31, 1984 ranged from 130 in the smallest plan to nearly 50,000 in the largest. The plans can be grouped into the following size categories:

<u>Demonstration Enrollment as of December 31, 1984</u>	<u>Number of Plans</u>
1000 or less	5
1001-2000	3
2001-3000	3
3001-5000	6
5001-10,000	3
10,001-20,000	1
more than 20,000	3

The average enrollment per plan at the end of 1984 was about 7,800; however, the average for all plans other than the 3 largest plans was 3,600, which is very close to the median enrollment of 3,450.

Since some plans began enrolling demonstration clients as early as the second half of 1982 and others did not begin enrolling until early 1984, enrollment figures for 1984 reflect the experiences of plans at different stages of development. In Table IV.6, 1984 enrollment experiences are summarized for plans classified by the year in which they began enrolling demonstration clients. Among the 3 plans which began enrolling clients in the second half of 1982, enrollments at the end of the first and fourth quarters of 1984 were:

TABLE IV.5
DEMONSTRATION ENROLLMENT BY QUARTER BY PLAN

Health Plan	Demonstration Enrollment by Quarter ¹				1984 Average Quarterly Growth Rate (%) ²
	1984:1	1984:2	1984:3	1984:4	
All Plans	109,340	129,544	148,544	187,260	19.6
Plan A	4,063	4,287	-	5,522	10.8
Plan B	4,897	3,519	-	3,450	-11.0
Plan C	3,419	3,228	3,389	4,894	12.7
Plan D	2,421	2,624	2,639	2,708	3.8
Plan E	0	129	354	494	95.7
Plan F	34,542	39,363	46,790	49,035	12.4
Plan G	18,853	19,578	19,559	22,235	5.7
Plan H	14,260	23,502	35,627	40,502	41.6
Plan I	636	1,124	1,328	1,692	38.6
Plan J	1,269	1,624	2,316	2,518	25.7
Plan K	38	345	668	1,457	237.2
Plan L	8,394	8,456	8,496	9,693	4.9
Plan M	888	1,192	2,226	2,954	49.3
Plan N	8,229	8,983	9,383	13,882	19.0
Plan O	0	1,093	1,747	4,366*	99.9
Plan P	62	355	429	1,539	191.7
Plan Q	1	75	188	228	74.4
Plan R	2,095	2,413	3,517	4,202	26.1
Plan S	0	61	113	130*	46.0
Plan T	2,276	2,604	2,699	4,172*	22.4
Plan U	2,997	3,893	4,019	4,106	11.1

TABLE IV. 5 (continued)

Health Plan	Demonstration Enrollment by Quarter ¹				1984 Average Quarterly Growth Rate (%) ²
	1984:1	1984:2	1984:3	1984:4	
Plan V	0	824	2,146	6,288	176.2
Plan W	0	217	772	999	114.6
Plan X	0	55	139	194*	87.8

¹Values marked with an asterisk were obtained from HCFA due to the unavailability of Quarterly Report data.

²For each plan, the average quarterly rate of growth in demonstration enrollment was computed over the period beginning with the first quarter of 1984 in which enrollment was positive and ending with the fourth quarter of 1984. The one exception to this is Plan Q, for which the average quarterly growth rate was computed over the period from 1984:2 through 1984:4, since this plan had only one enrollee in 1984:1.

TABLE IV.6

DEMONSTRATION ENROLLMENT IN 1984 FOR PLANS CLASSIFIED BY DATE OF
INITIAL ENROLLMENT

Item	Date of Initial Enrollment		
	1982	1983	1984
Number of plans	3	7	14
Enrollment as of March 1984			
- Mean	14,008	4,355	2,631
- Range	3,419 - 34,542	1,269 - 8,394	0 - 18,853
Enrollment as of Dec. 1984			
- Mean	19,817	5,790	6,234
- Range	4,894 - 49,035	2,518 - 13,882	130 - 40,502
Average Quarterly Growth Rate in 1984 (%)			
- Mean	12.0	10.8	91.8
- Range	10.8 - 12.7	-11.0 - 25.7	3.8 - 237.2

<u>1984:1</u> <u>Enrollment</u>	<u>1984:4</u> <u>Enrollment</u>	<u>Average Quarterly</u> <u>Growth Rate in 1984 (%)</u>
3,419	4,894	12.7
4,063	5,522	10.8
34,542	49,035	12.4

Seven plans began enrolling demonstration clients in 1983. Enrollments at the end of the first quarter of 1984 in these plans ranged from 1,269 to 8,394, with a mean of 4,355. By the end of the fourth quarter of 1984, the average enrollment in these plans had increased to 5,790, and enrollments ranged from 2,518 to 13,882. While one plan experienced a decline in enrollment during 1984 at an average rate of 11 percent per quarter, the remaining plans increased their enrollments at average quarterly rates ranging from 4 to 26 percent.

Among the 14 plans which began enrolling demonstration clients in the first half of 1984, eight had positive enrollments by the end of the first quarter. Two of these plans had over 14,000 enrollees, while enrollments in the remaining plans ranged from 1 to 2,095. By the end of the fourth quarter, the 15 plans which began enrolling clients in 1984 had enrollments ranging from 130 to 40,502, with a mean of 6,234. However, among all plans other than the two largest, the maximum enrollment was 6,288 and the mean was 2,045. These plans experienced increases in enrollment during 1984 at average quarterly rates ranging from 6 percent to over 200 percent.¹

¹For each plan, an average quarterly growth rate was computed for the period beginning with the first quarter of 1984 in which enrollment was positive and ending with the fourth quarter of 1984.

2. Demographic Characteristics of Enrollees

The distribution of beneficiaries enrolled in the demonstration at the end of 1984 by age, sex, Medicaid status, and institutional status is compared to that of the national Medicare population in Table IV.7. Beneficiaries aged 65-74 were more heavily represented in the demonstration than nationally, while the disabled and those 85 years and older were less heavily represented. Nearly 61 percent of the demonstration enrollees were aged 65-74, while 53 percent of the national Medicare population falls into this category. At the two extremes of the age distribution, 6 percent of demonstration enrollees were less than 65 and disabled, compared to 10 percent nationally, and 5 percent were 85 years or older, compared to 9 percent nationally. Males were more heavily represented in the demonstration than in the national Medicare population, accounting for nearly 48 percent of all demonstration enrollees but for only 42 percent of Medicare beneficiaries nationally. Finally, demonstration enrollees were less likely to be in a nursing home or on Medicaid than the national Medicare population. Over 97 percent of demonstration enrollees were neither institutionalized nor on Medicaid, roughly 2 percent were not institutionalized but on Medicaid, and less than half a percent were institutionalized. In contrast, among the aged Medicare population nationally, 5 percent are institutionalized, 13 percent are not institutionalized but on Medicaid, and 82 percent are neither institutionalized nor on Medicaid.

Tables IV.8 and IV.9 present the distribution of enrollees at the end of 1984 by age, sex, Medicaid status, and institutional status for each plan. While in general the mix of enrollees in individual plans mirrors

TABLE IV.7

CHARACTERISTICS OF DEMONSTRATION ENROLLEES COMPARED
TO THOSE OF THE NATIONAL MEDICARE POPULATION

Category	Percentage Distribution	
	Demonstration Enrollees as of December 1984	National Medicare Population ^{1,2}
Age		
< 65 (disabled)	6.0	9.7
65-69	32.9	29.3
70-74	27.8	23.7
75-79	18.6	17.2
80-84	9.6	11.0
85+	5.0	9.1
Sex		
Male	47.6	42.4
Female	52.4	57.6
Medicaid/Institutional Status		
Institutionalized	0.3	4.8
Noninstitutionalized, Medicaid	2.4	13.1
Noninstitutionalized, Non-Medicaid	97.4	82.1

¹The age/sex distribution of the national Medicare population was based on data for 1983 obtained from the following sources: Waldo and Lazenby (1984), Health Care Financing Administration (1984).

²The reported distribution by Medicaid/institutional status refers to the beneficiary population aged 65 and over. The percent institutionalized was obtained from University Health Policy Consortium (1982) and is based on 1977 data. The distribution by Medicaid status is based on data reported by McMillan and Gornick (1984) for the year 1980.

TABLE IV.8

AGE DISTRIBUTION OF THE DEMONSTRATION ENROLLEES
AT THE END OF 1984 BY PLAN

Plan	Age Distribution					
	<65	65-69	70-74	75-79	80-84	85+
All Plans						
Number	8,941	48,806	41,270	27,645	14,244	7,378
Percent	(6.0)	(32.9)	(27.8)	(18.6)	(9.6)	(5.0)
Plan A						
Number	291	2,228	1,377	886	501	238
Percent	(5.3)	(40.4)	(24.9)	(16.1)	(9.1)	(4.3)
Plan B						
Number	105	1305	928	623	278	211
Percent	(3.0)	(37.8)	(26.9)	(18.1)	(8.1)	(6.1)
Plan C						
Number	223	946	582	381	172	79
Percent	(9.4)	(39.7)	(24.4)	(16.0)	(7.2)	(3.3)
Plan D						
Number	98	900	865	518	228	99
Percent	(3.6)	(33.2)	(31.9)	(19.1)	(8.4)	(3.7)
Plan E						
Number	7	145	149	81	65	47
Percent	(1.4)	(29.4)	(30.2)	(16.4)	(13.2)	(9.5)
Plan F						
Number	2,546	11,941	11,017	7,727	4,051	2,081
Percent	(6.5)	(30.3)	(28.0)	(19.6)	(10.3)	(5.3)
Plan G						
Number	791	5,454	5,772	4,240	2,225	1,096
Percent	(4.0)	(27.9)	(29.5)	(21.7)	(11.4)	(5.6)
Plan H						
Number	2,231	8,077	6,305	4,051	1,867	971
Percent	(9.5)	(34.4)	(26.8)	(17.2)	(7.9)	(4.1)
Plan I						
Number	61	642	490	300	143	56
Percent	(3.6)	(37.9)	(29.0)	(17.7)	(8.5)	(3.3)
Plan J						
Number	43	1,007	731	447	196	94
Percent	(1.7)	(40.0)	(29.0)	(17.8)	(7.8)	(3.7)

TABLE IV.8 (continued)

Plan	Age Distribution					
	<65	65-69	70-74	75-79	80-84	85+
Plan K						
Number	0	697	385	237	104	44
Percent	(0.0)	(47.5)	(26.2)	(16.2)	(7.1)	(3.0)
Plan L						
Number	266	3,553	2,981	1,651	790	442
Percent	(2.8)	(36.7)	(30.8)	(17.1)	(8.2)	(4.6)
Plan M						
Number	84	1,384	820	412	180	74
Percent	(2.8)	(46.9)	(27.8)	(14.0)	(6.1)	(2.5)
Plan N						
Number	504	2,701	2,425	1,776	1,158	819
Percent	(5.4)	(28.8)	(25.8)	(18.9)	(12.3)	(8.7)
Plan O						
Number	205	537	442	310	160	93
Percent	(11.7)	(30.7)	(25.3)	(17.7)	(9.2)	(5.3)
Plan P						
Number	129	587	405	250	168	0
Percent	(8.4)	(38.1)	(26.3)	(16.2)	(10.9)	(0)
Plan Q						
Number	35	83	44	33	17	16
Percent	(15.4)	(36.4)	(19.3)	(14.5)	(7.5)	(7.0)
Plan R						
Number	400	1,423	1,175	715	358	139
Percent	(9.5)	(33.8)	(27.9)	(17.0)	(8.5)	(3.3)
Plan S						
Number	3	50	30	18	6	4
Percent	(2.7)	(45.1)	(27.0)	(16.2)	(5.4)	(3.6)
Plan T						
Number	217	916	692	495	291	111
Percent	(8.0)	(33.7)	(25.4)	(18.2)	(10.7)	(4.1)

Table IV. 8 (continued)

Plan	Age Distribution					
	<65	65-69	70-74	75-79	80-84	85+
Plan U						
Number	120	1,571	1,221	693	325	176
Percent	(2.9)	(38.3)	(29.7)	(16.9)	(7.9)	(4.3)
Plan V						
Number	430	2,240	2,161	1,585	847	427
Percent	(5.6)	(29.1)	(28.1)	(20.6)	(11.0)	(5.6)
Plan W						
Number	115	323	240	178	98	43
Percent	(11.5)	(32.4)	(24.1)	(17.9)	(9.8)	(4.3)
Plan X						
Number	37	96	33	38	16	18
Percent	(15.6)	(40.3)	(13.9)	(16.0)	(6.7)	(7.6)

NOTE: For most plans, the reported values were computed from data provided in the fourth quarterly report for 1984. However, for three plans that did not submit a fourth quarter report, data from the third quarter were used.

TABLE IV.9

DISTRIBUTION OF DEMONSTRATION ENROLLEES
AT THE END OF 1984 BY SEX AND MEDICAID/INSTITUTIONAL
STATUS BY PLAN

Health Plan	Sex		Institutionalized	Medicaid/Institutional Status	
	Male	Female		Noninstitutionalized Medicaid	Noninstitutionalized Non-Medicaid
All Plans					
Number	69,769	78,805	352	5,529	155,446
Percent	(47.0)	(53.0)	(0.3)	(2.4)	(97.4)
Plan A					
Number	2,540	2,981	0	138	5,383
Percent	(46.0)	(54.0)	(0.0)	(2.5)	(97.5)
Plan B					
Number	1,587	1,863	0	40	3,410
Percent	(46.0)	(54.0)	(0.0)	(1.2)	(98.8)
Plan C					
Number	1,176	1,207	0	165	2,218
Percent	(49.4)	(50.7)	(0.0)	(6.9)	(93.1)
Plan D					
Number	1,342	1,366	0	0	2,708
Percent	(49.6)	(50.4)	(0.0)	(0.0)	(100.0)
Plan E					
Number	240	254	0	0	494
Percent	(48.6)	(51.4)	(0.0)	(0.0)	(100.0)
Plan F					
Number	19,741	19,622	182	988	38,193
Percent	(50.2)	(49.9)	(0.5)	(2.5)	(97.0)
Plan G					
Number	8,878	10,700	47	420	19,111
Percent	(45.4)	(54.7)	(0.2)	(2.2)	(97.6)
Plan H					
Number	12,179	11,323	43	545	22,914
Percent	(51.8)	(48.2)	(0.2)	(2.3)	(97.5)
Plan I					
Number	744	948	0	10	1,682
Percent	(44.0)	(56.0)	(0.0)	(0.6)	(99.4)
Plan J					
Number	1,117	1,401	0	20	2,498
Percent	(44.4)	(55.6)	(0.0)	(0.8)	(99.2)
Plan K					
Number	615	852	-	-	-
Percent	(41.9)	(58.1)	-	-	-

TABLE IV. 9 (continued)

Health Plan	Sex		Medicaid/institutional Status		
	Male	Female	Institutionalized	Noninstitutionalized Medicaid	Noninstitutionalized Non-Medicaid
Plan L					
Number	4,523	5,160	28	13	9,524
Percent	(46.7)	(53.3)	(0.3)	(1.4)	(98.4)
Plan M					
Number	1,344	1,610	4	23	2,927
Percent	(45.5)	(54.5)	(0.1)	(0.8)	(99.1)
Plan N					
Number	4,045	5,338	11	493	8,879
Percent	(43.1)	(56.9)	(0.1)	(5.3)	(94.6)
Plan O					
Number	819	928	0	325	1,422
Percent	(46.9)	(53.1)	(0.0)	(18.6)	(81.4)
Plan P					
Number	740	799	0	0	1,539
Percent	(48.1)	(51.9)	(0.0)	(0.0)	(100.0)
Plan Q					
Number	100	128	0	5	223
Percent	(43.9)	(56.1)	(0.0)	(2.2)	(97.8)
Plan R					
Number	1,541	2,669	0	0	4,210
Percent	(36.6)	(63.4)	(0.0)	(0.0)	(100.0)
Plan S					
Number	56	55	0	0	111
Percent	(50.5)	(49.6)	(0.0)	(0.0)	(100.0)
Plan T					
Number	1,137	1,565	16	7	2,699
Percent	(42.5)	(57.5)	(0.6)	(0.3)	(99.2)
Plan U					
Number	1,850	2,256	18	18	4,070
Percent	(45.1)	(54.9)	(0.4)	(0.4)	(99.2)
Plan V					
Number	2,888	4,372	-	-	-
Percent	(39.8)	(60.2)	-	-	-
Plan W					
Number	446	551	0	0	997
Percent	(44.7)	(55.3)	(0.0)	(0.0)	(100.0)
Plan X					
Number	101	137	3	1	234
Percent	(42.4)	(57.6)	(1.3)	(0.4)	(98.3)

NOTE: For most plans, the reported values were computed from data provided in the fourth quarterly report for 1984. However, for three plans that did not submit a fourth quarter report, data from the third quarter were used.

that of the entire enrollment group, examination of plan-specific data reveals several interesting results:

- o While 33 percent of all enrollees in the demonstration are aged 65-69, the contribution of this age group to the enrollments of individual plans varies from 28 to 48 percent. In 6 plans, individuals aged 65-69 account for at least 40 percent of the total enrollment.
- o Individuals aged 85 and over account for 5 percent of all demonstration enrollees, and among individual plans the proportion of enrollees falling in this age group ranges from 0 to 10 percent.
- o While 6 percent of all enrollees in the demonstration are less than 65 years of age and disabled, the contribution of this age group to the enrollments of individual plans varies from 0 to 16 percent.
- o In all but 3 plans, at least 97 percent of the enrollees are neither institutionalized nor on Medicaid. In the remaining 3 plans, enrollees who are not institutionalized but on Medicaid account for 5, 7, and 19 percent of total enrollment.
- o Of the 22 plans which reported data on the distribution of enrollees by Medicaid and institutional status, 13 reported that none of their enrollees were institutionalized. In the other plans, the proportion of enrollees who were institutionalized ranged from 0.1 to 1.3 percent.

To summarize, demonstration enrollees are more heavily concentrated in the 65-74 age group than the national Medicare population and are less heavily concentrated in the 85 and over category and in the under 65 (disabled) category. They are also less likely to be on Medicaid or in a nursing home.

It is possible to use the plan enrollment data by demographic risk categories (age, sex, and institutional/Medicaid status) to construct a demographic risk index for enrollment in each plan. The AAPCC payment system uses demographic weighting factors to reimburse the plans according

to the demographic risk category of each enrollee (Kunkel and Powell, 1981). For the aged Medicare population, the categories are based upon five age strata, two sex strata, and three strata for Medicaid/institutional status; or 30 categories in all. Appendix B shows the demographic risk categories and the relative weights assigned to each cell based upon a 1976 survey of Medicare beneficiaries which computed the relative cost or risk of each category for the Medicare program.

A weight of one equals the average national risk at the time of the survey. By assigning the appropriate weight to each enrollee, depending upon their demographic risk category, and computing the mean weight for each plan, we are able to construct a demographic risk index for each plan. Using data provided by HCFA, GPO, the same average was computed for the counties from which each plan was authorized to draw risk-based enrollment. More specifically, the calculation of each index was as follows:

- o Plan demographic risk index - The numerator is the sum of plan enrollee counts for each of the AAPCC cells multiplied by each cell weight in Appendix F. The denominator is an unweighted count of Medicare risk-based enrollees.
- o Market demographic risk index - The numerator is the sum of Medicare beneficiary counts for each of the AAPCC cells multiplied by each cell weight in Appendix F, for beneficiaries in all the counties comprising the plan's market area. The denominator is an unweighted count of Medicare beneficiaries in all the counties comprising the plan's market area.

The results are displayed in Table IV.10 for each plan as of December 1984 excluding beneficiaries dually eligible for Medicaid.

Because Medicaid beneficiaries are excluded in the calculations, we would expect the demographic risk index to be less than one, although this

TABLE IV.10

DEMOGRAPHIC RISK INDEX FOR DEMONSTRATION ENROLLMENTS, MARKET AREA
OF OPERATION, AND RATIO OF HEALTH PLAN TO MARKET INDEX BY PLAN
(DECEMBER 1984)

Health Plans	Non-Medicaid Enrollment December 1984	<u>Demographic Risk Index</u> ¹		Health Plan as Percent of Market Are.
		Health Plans	Market	
All Plans or Markets				
Median	2,938	0.808	0.889	91.5
Mean	6,542	0.809	0.896	90.5
Plan A	6,546	0.808	0.863	93.5
Plan B	2,845	0.815	0.881	92.4
Plan C	3,632	0.792	0.863	91.7
Plan D	2,458	0.810	0.863	93.9
Plan E	461	0.871	0.863	100.9
Plan F	39,603	0.838	0.863	97.0
Plan G	18,450	0.838	0.859	97.5
Plan H	31,289	0.827	0.881	93.9
Plan I	1,600	0.798	0.916	87.1
Plan J	2,424	0.793	0.927	85.5
Plan K	1,362	0.779	0.934	83.4
Plan L	9,080	0.807	0.934	86.4
Plan M	2,833	0.768	0.924	83.0
Plan N	12,253	0.841	0.917	91.6
Plan O	3,031	0.815	0.917	88.8
Plan P	995	0.790	0.865	91.3
Plan Q	191	0.808	0.865	93.4

TABLE IV.10 (continued)

Health Plans	Non-Medicaid Enrollment December 1984	Demographic Risk Index ¹		Health Plan as Percent of Market Area
		Health Plans	Market	
Plan R	3,751	0.795	0.981	80.9
Plan S	124	0.791	0.864	91.5
Plan T	3,688	0.825	0.891	92.5
Plan U	3,940	0.800	0.922	86.8
Plan V	5,678	0.810	0.934	86.7
Plan W	716	0.815	0.899	90.6
Plan X	162	0.795	0.886	89.6

¹The demographic risk index for demonstration HMOs and their market areas was computed with Medicaid beneficiaries excluded.

ultimately depends upon the mix of beneficiaries in the counties in which the plans operate and plan enrollment compared to the national distribution of beneficiaries across demographic risk categories. As indicated in Table IV.10, the demographic risk index for each plan ranged from a low of 0.768 to a high of 0.871. The average demographic risk index is also shown for the market areas for each plan, in order to characterize the relative risk of each market area for the plans. These range from 0.859 to 0.981. The last column in Table IV.10 shows the demographic risk index for the plan as a percent of the index for each plan's own market area. All plans but one enrolled beneficiaries in lower than average demographic risk categories. One plan essentially enrolled a representative group of beneficiaries from the local Medicare population. This plan had among the lowest levels of enrollment, however, at the time. All other plans experienced enrollment from lower than average demographic risk categories, with the lowest experiencing an enrollment of 81 percent of the demographic risk in the area.

It should be emphasized that these data cannot be used to imply biased selection in the plans because the demographic risk factors considered are the same ones used to adjust the risk-based capitation payment for different types of enrollees. Thus, if the plans enrolled from lower than average demographic risk categories, they were paid at a proportionately lower level as a result. One can only address the issue of biased selection by understanding the risk within a demographic risk category. This analysis will be carried out in another portion of the National Medicare Competition Evaluation using data on a selected sample of individual enrollees and non-enrollees.

3. Disenrollments

The number of disenrollments in 1984 (excluding those due to death) varied across plans from 0 to over 8,000. However, in interpreting these figures, it should be emphasized that disenrollments for each plan are self-reported and have not been validated using any independent data sources. Therefore, comparisons across plans should be interpreted with caution. Furthermore, it should be recognized that in some market areas, particularly South Florida, disenrollments may reflect enrollees switching from one plan to another. Table IV.11 presents 1984 disenrollments in total and by quarter for each plan. In order to obtain some indication of the relative incidence of disenrollments, the table presents the ratio of disenrollments in each quarter of 1984 to the total number of enrollees active at any time during the quarter (i.e., the number active at the end of the quarter plus the number who disenrolled during the quarter).¹ Similarly, the final column of the table presents the ratio of disenrollments in all of 1984 to the total number of enrollees active at any time during the year. This percent of enrollees who disenroll provides a crude indicator of enrollee's dissatisfaction with the plan, but also reflects other reasons for disenrollment, such as movement out of the area (either permanent relocation or seasonal migration). The rates may understate the real rate of disenrollment since sample members enrolling in late 1984 may have had too little experience with the plan to consider disenrollment.

¹This calculation of the number active at any time during the quarter is not strictly correct because it excludes the small number of enrollees who died during the quarter. Since our interest here is in disenrollments as an indicator of dissatisfaction, it is necessary to exclude those due to death from both the numerator and the denominator of the disenrollment rate.

TABLE IV.11

DISENROLLMENT FROM THE DEMONSTRATION BY QUARTER BY PLAN

Health Plan	Demonstration Disenrollment by Quarter									
	1984:1		1984:2		1984:3		1984:4		Total ¹	
	#	%	#	%	#	%	#	%	#	%
All Plans	5,874	(5.4)	7,497	(5.8)	9,154	(6.2)	7,394	(3.8)	29,912	(13.8)
Plan A	268	(6.2)	824	(16.1)	-	-	500	(8.3)	1,592	(22.4)
Plan B	1,158	(19.1)	931	(20.9)	-	-	552	(13.8)	2,641	(43.4)
Plan C	178	(5.0)	197	(5.8)	156	(4.4)	228	(4.5)	759	(13.4)
Plan D	178	(6.9)	313	(10.7)	249	(8.6)	180	(6.2)	920	(25.4)
Plan E	-	-	4	(3.0)	15	(4.1)	17	(3.3)	36	(6.8)
Plan F	1,450	(4.0)	1,562	(3.8)	2,973	(6.0)	2,129	(4.2)	8,114	(14.2)
Plan G	1,566	(7.7)	1,165	(5.6)	1,611	(7.6)	1,006	(4.3)	5,348	(19.4)
Plan H	435	(3.0)	1,554	(6.2)	2,996	(7.8)	2,455	(5.7)	7,440	(15.5)
Plan I	3	(0.5)	17	(1.5)	20	(1.5)	28	(1.6)	68	(3.9)
Plan J	81	(6.0)	37	(2.2)	49	(2.1)	9	(0.4)	176	(6.5)
Plan K	-	-	-	-	-	-	-	-	-	-
Plan L	145	(1.7)	79	(0.9)	75	(0.9)	87	(0.9)	386	(3.8)
Plan M	21	(2.3)	7	(0.6)	26	(1.2)	35	(1.2)	89	(2.9)
Plan N	347	(4.1)	646	(6.7)	772	(7.6)	-	-	1,765	(15.8)
Plan O	0	-	27	(2.4)	83	(4.5)	-	-	110	(5.9)
Plan P	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Plan Q	0	(0.0)	16	(17.6)	28	(13.0)	74	(24.5)	118	(34.1)
Plan R	11	(0.5)	14	(0.6)	28	(0.8)	56	(1.3)	109	(2.5)
Plan S	-	-	0	(0.0)	0	(0.0)	-	-	0	(0.0)
Plan T	17	(0.7)	34	(1.3)	28	(1.0)	-	-	79	(2.8)
Plan U	16	(0.5)	70	(1.8)	36	(0.9)	31	(0.8)	153	(3.6)

TABLE IV.11 (continued)

Health Plan	Demonstration Disenrollment by Quarter				Total
	1984:1 # %	1984:2 # %	1984:3 # %	1984:4 # %	
Plan V	- -	- -	- -	- -	- (-)
Plan W	- -	0 (0.0)	4 (0.5)	6 (0.6)	10 (1.0)
Plan X	- -	- -	5 (3.5)	1 (0.4)	6 (2.5)

NOTE: Quarterly disenrollment rates are defined as the ratio of disenrollments in each quarter to the sum of enrollments at the end of the quarter plus disenrollments during the quarter. Total disenrollment rates for 1984 are defined analogously.

¹Note that total disenrollment rates for 1984 are not equal to the sum or the mean of disenrollment rates for individual quarters in that year. This is because the denominator used in the calculation of quarterly disenrollment rates varies across quarters.

The total 1984 disenrollment rates by plan in Table IV.11 range from 0 to 43 percent, with an average of 11.2 percent and the following distribution:

<u>Disenrollment rate</u>	<u>Number of plans</u>
5 percent or less	10
5 to 10 percent	3
10 to 20 percent	5
More than 20 percent	4
Unknown	2

Overall, 13.8 percent of all persons enrolled in the 24 demonstration plans at some time during 1984 disenrolled during the year. Examining the quarterly disenrollment figures reveals that most plans experienced fairly steady rates of disenrollment throughout 1984.

Disenrollment rates were particularly high in plans located in Florida. Among the 8 Florida plans, 1984 disenrollment rates ranged from 6.8 to 43.4 percent, with an average of 20.1 percent. In contrast, the average disenrollment rate among non-Florida plans was 6.1 percent. Of the 14 non-Florida plans that reported data on disenrollment, 12 experienced disenrollment rates of less than 7 percent, while the remaining 2 plans experienced rates of 15.8 and 34.1 percent, respectively. Part of the reason for the relatively low rates of disenrollment among most non-Florida plans may be the fact that the majority of such plans did not begin enrolling demonstration clients until 1984, and therefore many enrollees may have had too little experience with the plan to consider disenrollment. However, sharp differences between Florida and non-Florida plans persist even after accounting for differences in the date they began enrolling. Table IV.12, which presents 1984 disenrollment rates for plans

TABLE IV.12

1984 DISENROLLMENT RATES FOR PLANS CLASSIFIED
BY GEOGRAPHIC LOCATION AND DATE OF INITIAL ENROLLMENT

Geographic Location	Date of Initial Enrollment			
	1982	1983	1984	All Plans
All Plans				
Number of plans	3	7	12	22
Disenrollment rates				
- Average	16.7	14.5	7.9	11.2
- Range	13.4 - 22.4	2.8 - 43.4	0 - 34.1	0 - 43.4
Florida Plans				
Number of plans	3	2	3	8
Disenrollment rates				
- Average	16.7	34.4	13.9	20.1
- Range	13.4 - 22.4	25.4 - 43.4	6.8 - 19.4	6.8 - 43.4
Non-Florida Plans				
Number of plans	0	5	9	14
Disenrollment rates				
- Average	--	6.5	5.9	6.1
- Range	--	2.8 - 15.8	0 - 34.1	0 - 34.1

classified by date of initial enrollment and geographic location, reveals the following patterns:¹

- o Among the 12 plans which began enrolling demonstration clients in 1984, the average disenrollment rate was 7.9 percent. Three of these plans were located in Florida and experienced an average disenrollment rate of 13.9 percent, while the 9 non-Florida plans experienced an average rate of 5.9 percent. However, the average for non-Florida plans was distorted by the fact that one plan experienced a 34.1 percent disenrollment rate. Among the other non-Florida plans, rates ranged from 0 to 5.9 percent, with a mean of 2.3 percent.
- o The 7 plans which began enrolling demonstration clients in 1983 experienced an average 1984 disenrollment rate of 14.5 percent. For the 2 Florida plans the average rate was 34.4 percent, while the 5 non-Florida plans experienced an average rate of 6.5 percent.
- o The 3 plans which began enrolling demonstration clients in 1982 are all located in Florida, and they experienced an average 1984 disenrollment rate of 16.7 percent.

Whether the high disenrollments among Florida plans is due to dissatisfaction of enrollees, the switching of enrollees from one plan to another, or to the seasonal movement into and out of the area is not known, but will be explored in future analyses.

C. HMO UTILIZATION EXPERIENCE

In this section, we examine the 1984 utilization experience of the demonstration plans. We begin by discussing the sources and limitations of the data used for the analysis. Next, we examine the hospital use rates for individual plans and compare these to use rates in the fee-for-service sector of the plans' local market areas. We then examine the associations between the plans' hospital use rates (measured relative to fee-for-service

¹Two of the 24 plans included in our analysis were excluded from Table IV.12 because of the lack of data on disenrollments.

rates in the local market areas) and the plan characteristics and enrollment experiences examined in the two previous sections. Finally, we examine use rates for a variety of non-hospital services. Because data on use rates in the local market areas are not available for these services, this component of the analysis is limited to a comparison of utilization experience across plans.

1. Sources and Limitations of the Data

Utilization rates for selected services have been computed using data provided in the Quarterly Administrative Reports on the quantity of services used by enrollees and on the number of person-months of enrollment. Although some plans submitted reports for fewer than four quarters in 1984, utilization rates for each plan are presented on an annualized basis. For each plan, annualized use rates were computed from the available Quarterly Reports by (1) converting the total number of person-months of enrollment to person-years by dividing by 12, and (2) dividing the quantity of services used by enrollees by the number of person-years of enrollment. For eight plans, person-months of enrollment in at least one quarter of 1984 either were not reported or else the reported values were clearly incorrect, and it was therefore necessary to estimate person-months from the reported enrollee count.

In examining and comparing utilization rates, it is important to keep in mind that they have been computed using self-reported data provided by the plans. Therefore, the findings presented below should be regarded as preliminary. A limited degree of confirmation of our findings is possible by comparing utilization rates computed from Quarterly Report data to use rates reported directly by the plans during the course of site

visits and post-site visit telephone contacts. However, since the primary focus of site visits and telephone contacts was on the plans' implementation experiences and operational and organizational characteristics, information that was collected on utilization rates was limited primarily to hospital services. Furthermore, it is important to emphasize that comparisons of use rates computed from the Quarterly Report data to values reported directly by the plans do not constitute a true validation of our findings, but at best provide a limited degree of confirmation. In all cases, we are restricted to self-reported data provided by the plans. In general, the data provided in the Quarterly Reports represent the most complete and reliable source of information on the plans' utilization experience.

Table IV.13 compares hospital use rates computed from Quarterly Report data to values reported by the plans during site visits and post-site visit telephone contacts. In general, the values computed from data provided in the Quarterly Reports are very similar to values reported directly by the plans. For four plans (designated as Plans O, P, S, and X), hospital use rates computed from Quarterly Reports are not presented in the table, because the data were judged to be unreliable. Two of these plans (P and Y) reported during the course of site visits or telephone contacts that reliable utilization data were not available, and have therefore been excluded from our analysis. Plan S has also been excluded because it submitted only two quarters of data, exhibited significant variation in use rates over those quarters, and reported during our telephone contacts that use rates were highly unstable and differed significantly from those computed using Quarterly Report data. Such instability in hospital use rates is not unexpected given the plan's small

TABLE IV.13

HOSPITAL USE RATES AMONG DEMONSTRATION ENROLLEES:
A COMPARISON OF VALUES COMPUTED FROM THE QUARTERLY REPORTS
TO VALUES REPORTED DIRECTLY BY THE PLANS

	Hospital Days Per 1,000 Member Years				
	Quarterly Reports ¹		Site Visits ^{2,3}		Telephone Contacts in Feb.-March, 1984
	Computed Value	Number of Quarters of Data	Reported Value	Date of Visit	
Plan A	1,986	2	2,200	8/84	2,022
Plan B	1,239	2	—	—	1,909
Plan C	1,556	4	—	9/84	1,496
Plan D	1,935	4	2,000	9/84	2,151
Plan E	3,805	3	4,000	9/84	4,000
Plan F	2,007	4	2,300	8/84	1,857
Plan G	2,366	4	—	—	—
Plan H	1,862	4	—	—	—
Plan I	2,443	4	2,200	12/84	2,444*
Plan J	2,369	4	2,545	12/84	2,602*
Plan K	3,845	4	—	7/84	2,896
Plan L	1,929	4	2,180	12/84	2,180*
Plan M	2,085	4	2,300	12/84	1,831*
Plan N	1,401	3	1,600	8/84	1,680
Plan O	—	3	1,700	11/84	—
Plan P	—	4	—	12/84	—
Plan Q	1,790	4	—	8/84	2,275
Plan R	1,874	4	2,147	7/84	2,007*
Plan S	—	2	—	9/84	—
Plan T	3,139	3	3,500	6/84	—

TABLE IV.13 (continued)

	Hospital Days Per 1,000 Member Years				
	Quarterly Reports ¹		Site Visits ^{2,3}		Telephone Contact in Feb.-March, 19
	Computed Value	Number of Quarters of Data	Reported Value	Date of Visit	Reported Value
Plan U	1,951	4	--	6/84	2,100
Plan V	2,779	3	2,861	10/84	3,100
Plan W	1,859	3	--	--	--
Plan X	--	3	--	--	--

¹Use rates from the Quarterly Reports are not reported for the plans designated O, P, S, and X because the data were judged to be unreliable.

²For the four plans which received highly structured telephone interviews following their site visit, reported use rates were taken from the telephone interviews rather than the site visit.

³Plans for which no site visit date appears did not receive such a visit. Plans for which a site visit date is given but no corresponding use rate appears did not provide information on use rates during the visit.

⁴The use rates obtained from telephone contacts that are marked with an asterisk were specifically reported as reflecting the plan's experience for all of 1984. Other values reflect experiences either for the month preceding the telephone contact or for some unspecified period of time.

enrollment (130 persons at the end of 1984). The fourth plan for which utilization data in the Quarterly Reports were judged to be unreliable (Plan O) has been included in our analysis using information on hospital use rates reported during the site visit. The exclusion of Plans P, S, and X means that our analysis of utilization rates will be based on the experience of 21 of the 24 plans that submitted Quarterly Reports for 1984.

2. Utilization of Hospital Services

In this section, 1984 hospital use rates for demonstration enrollees in each plan are presented and compared to projected 1984 fee-for-service use rates among Medicare beneficiaries in the plan's market area. The fee-for-service use rates were computed using data obtained from the Area Resource File (ARF) on Medicare beneficiaries' total use of hospital services in each county of a given market area in 1982 and on the total number of beneficiaries in that county in 1980, which were the most recent years available on the ARF. These data were then projected forward to 1984 to make them comparable to HMO data and to account for the changes in hospital use rates that have been observed following the implementation in 1983 of the DRG-based prospective payment system.

For each market area, the total number of hospital days and hospital admissions reported on the ARF for 1982 was projected forward to 1984 using state-specific data provided by HCFA on the change in hospital use over that period. Specifically, we assumed that from 1982 to 1984 hospital use in each county changed by the same percentage as in the state in which it is located. Similarly, the total number of beneficiaries in each county reported on the ARF for 1980 was projected forward to 1984 by assuming that the county experienced the same percentage change in its

Medicare population over that period as the entire state. These 1984 use and enrollment estimates for each county were then used to estimate county-level fee-for-service use rates. Finally, the estimated 1984 fee-for-service use rate for the market area of each plan was defined as the weighted average of the use rates for all counties in that area, where the weights represent the distribution of demonstration enrollees across counties as of December 31, 1984.

It is important to emphasize at the outset that comparisons of hospital use rates experienced by the demonstration plans in 1984 to projected 1984 fee-for-service use rates in the plans' market areas are descriptive in nature and do not provide an estimate of demonstration impacts. The data available for this study do not permit us to disentangle the total difference in use rates experienced by the plans and those experienced in the local fee-for-service sector into that portion due to the nonrandom selection of enrollees and that due to the impact of the demonstration. Given the evidence presented in Section IV.B that demonstration enrollees are more heavily concentrated in the lower risk cells of the AAPCC than the national Medicare population, we would expect to observe lower use rates among enrollees even in the absence of any demonstration impacts. In subsequent reports, individual-level data on demonstration enrollees and a comparison group of Medicare beneficiaries receiving care in the fee-for-service sector will be used to estimate demonstration impacts, controlling for differences between those groups in characteristics thought to be associated with the need for health care services.

In 19 of the 21 plans for which reliable data were available, the use of hospital services by demonstration enrollees occurred at a lower rate than the projected 1984 rate for Medicare beneficiaries in the fee-for-service sector of the local market area (see Table IV.14). The remaining two plans experienced hospital use rates roughly equal to those in the local market area. Overall, the (unweighted) plan mean of 2,189 days per 1,000 person years was 63 percent of the (unweighted) market area mean of 3,502 days per 1,000. Examination of median use rates yields similar conclusions: The median hospital use rate among the plans was 1,951 days per 1,000, roughly 57 percent of the median market area rate of 3,432 days per 1,000. Hospital use rates varied across plans from 1,239 to 3,845 days per 1,000, with most plans experiencing use rates near or below the overall plan mean. Of the 21 plans included in the analysis, 9 experienced use rates in the range of 1,800 to 2,200 days per 1,000 and 5 had rates of less than 1,800 days per 1,000. Only 3 plans had hospital use rates exceeding 3,000 days per 1,000. Expressed as a percentage of the hospital use rate experienced by Medicare beneficiaries in the fee-for-service sector of the local market area, use rates varied across plans from 41 to 104 percent and had the following distribution:

HMO Hospital Use Rate as a Percent of Local Market Area Rate	Number of Plans
41-50	8
51-60	4
61-70	3
71-90	3
91-104	3

The relatively low rates of hospital use among demonstration enrollees compared to projected 1984 rates among Medicare beneficiaries in

TABLE IV.14

HOSPITAL UTILIZATION RATES BY PLAN COMPARED TO PROJECTED 1984 FEE-FOR-SERVICE UTILIZATION RATES
IN THE PLAN'S MARKET AREA

Health Plan	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Demonstration Enrollees	Area FFS	Ratio of (1) to (2)	Demonstration Enrollees	Area FFS	Ratio of (4) to (5)	Demonstration Enrollees	Area FFS	Ratio of (7) to (8)
Plan Median	1,951	3,432	0.57	269	383	0.71	8.6	9.1	0.81
Plan Mean	2,189	3,502	0.63	282	376	0.77	8.2	9.4	0.86
Plan A	1,986	3,504	0.57	310	389	0.80	6.4	9.0	0.71
Plan B	1,239	2,520	0.49	193	285	0.68	6.4	8.9	0.72
Plan C	1,556	3,809	0.41	181	404	0.45	8.6	9.4	0.92
Plan D	1,935	3,070	0.63	317	366	0.87	6.1	8.4	0.73
Plan E	3,805	3,807	1.00	418	404	1.03	9.1	9.4	0.97
Plan F	2,007	3,397	0.59	231	383	0.60	8.7	8.9	0.98
Plan G	2,366	2,267	1.04	272	284	0.96	8.7	8.0	1.1
Plan H	1,862	2,622	0.71	215	301	0.71	8.7	8.7	0.99
Plan I	2,443	2,995	0.82	310	309	1.01	7.9	9.7	0.81
Plan J	2,369	3,432	0.69	245	339	0.72	9.7	10.6	0.71
Plan K	3,845	4,081	0.94	510	386	1.32	7.5	10.6	1.3
Plan L	1,929	4,081	0.47	136	386	0.35	14.2	10.6	1.3
Plan M	2,085	4,203	0.50	207	361	0.57	10.1	11.6	0.86
Plan N	1,456	3,208	0.45	264	395	0.67	5.5	8.1	0.68
Plan O	1,700	3,304	0.51	--	392	--	--	8.4	--
Plan P	--	--	--	--	--	--	--	--	--
Plan Q	1,790	3,696	0.48	269	369	0.73	6.6	10.0	0.66

TABLE IV.14 (continued)

Health Plan	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
	(1) Demonstration Enrollees	(2) Area FFS	(3) Ratio of (1) to (2)	(4) Demonstration Enrollees	(5) Area FFS	(6) Ratio of (4) to (5)	(7) Demonstration Enrollees	(8) Area FFS	(9) Ratio of (7) to (8)
Plan R	1,874	4,256	0.44	287	449	0.64	6.5	9.5	0.69
Plan S	--	--	--	--	--	--	--	--	--
Plan T	3,139	4,501	0.70	362	528	0.69	8.7	8.5	1.0
Plan U	1,951	4,016	0.49	210	343	0.61	9.3	11.7	0.79
Plan V	2,779	3,395	0.82	421	371	1.13	6.6	9.1	0.72
Plan W	1,859	3,380	0.55	--	446	--	--	7.6	--
Plan X	--	--	--	--	--	--	--	--	--

the plans' market areas was due both to fewer than average admissions and shorter than average lengths of stay, although in general the primary factor was the lower admission rate. Overall, the plans experienced a mean of 282 hospital admissions per 1,000 person years, roughly 75 percent of the market area mean of 376 admissions per 1,000. Admission rates varied across plans from 136 to 510 per 1,000, with over 70 percent of the plans experiencing fewer than 350 admissions per 1,000. The average length of stay varied across plans from 5.5 to 14.2 days, with a mean of 8.2 days, or 87 percent of the market area mean of 9.4 days. Two-thirds of the plans experienced an average stay length of less than 9 days.

In Table IV.15, hospital use rates are presented by plan for each quarter of 1984. Given the relatively short period of observation, there are no discernible trends in the quarterly figures for individual plans. Rather, the figures for some plans seem to be characterized by a great deal of random variation. As expected, this variation is greatest for plans with relatively small enrollments (Plans E and Q).

In order to determine whether certain types of plans differ from others with regard to hospital use rates, these statistics have been tabulated for various plan groupings based on plans' organizational and operational characteristics and enrollment experiences. The organizational and operational characteristics to be examined were defined in Section IV.A. In selecting plan characteristics to be included in the analysis, we have relied on the findings of previous research as well as our prior expectations on factors that are likely to influence hospital utilization. For example, prior research on the under 65 population suggests that we may observe differences in use rates between IPA-HMOs and PGP-HMOs. Similarly, our prior expectations suggest that the financial incentives

TABLE IV.15
HOSPITAL UTILIZATION RATES BY QUARTER BY PLAN

Health Plan	Demonstration Enrollment as of December 31, 1984	Hospital Days Per 1,000 Member Years				
		1984:1	1984:2	1984:3	1984:4	Total
Plan Median	3,202	1,753	1,887	2,098	1,977	1,931
Plan Mean	7,803	1,699	2,006	2,324	2,271	2,189
Plan A	3,522	1,998	--	--	1,977	1,986
Plan B	3,430	1,179	--	--	1,313	1,239
Plan C	4,894	1,216	1,431	2,229	1,365	1,536
Plan D	2,708	2,054	1,831	1,867	1,981	1,935
Plan E	494	--	3,678	3,073	2,995	3,805
Plan F	49,033	1,854	2,200	2,002	1,970	2,007
Plan G	22,233	--	--	--	--	2,366
Plan H	40,302	--	--	--	--	1,862
Plan I	1,692	2,984	2,193	2,126	2,696	2,443
Plan J	2,318	--	2,036	2,392	3,318	2,369
Plan K	1,437	0	1,717	2,896	4,848	3,845
Plan L	9,693	2,136	1,738	2,070	1,774	1,929
Plan M	2,934	1,653	2,312	1,974	2,134	2,085
Plan N	13,882	1,254	1,307	1,406	1,381	1,436
Plan O	4,366	--	--	--	--	1,700
Plan P	1,539	--	--	--	--	--
Plan Q	228	0	1,474	1,169	2,275	1,790
Plan R	4,202	1,614	1,819	1,928	1,966	1,874

TABLE IV.15 (continued)

Health Plan	Demonstration Enrollment as of December 31, 1984	Hospital Days Per 1,000 Member Years				Total
		1984:1	1984:2	1984:3	1984:4	
Plan T	2,699	3,544	3,167	2,796	--	3,139
Plan U	4,106	2,298	1,923	1,922	1,771	1,951
Plan V	6,288	--	869	3,109	2,836	2,779
Plan W	999	--	1,935	2,223	1,614	1,899
Plan X	194	--	--	--	--	--

facing various actors may have an important effect on use rates. However, it is important to recognize that this analysis, like the previous analysis of hospital use rates for individual plans, is essentially descriptive in nature. That is, while we may observe that specific types of plans differ from others in their utilization experience, the data available for this study will not permit us to determine the extent to which these patterns are due to differences across plans in the ability to constrain use or to differences in the health status of the beneficiaries enrolled. Any relationships observed in this analysis will form the basis for hypotheses to be tested in subsequent analyses once individual-level data become available.

All 21 plans for which hospital use rates were presented in previous tables are included in the present analysis. Because of the small number of observations in each cell, we do not conduct statistical tests of the equivalence of use rates across categories. Furthermore, because of the small cell sizes and the distorting effects that extreme values can have on the mean in such cases, we have chosen the median as the preferred measure of central tendency for this analysis. Thus, for each group of HMOs classified by a particular characteristic, we present the median plan use rate, the median market area rate, and the median ratio of the plan to market area rate (see Table IV.16).

Among the strongest relationships to emerge between plan characteristics and hospital use rates are those observed for organizational form. With a median hospital use rate of 2,779 days per 1,000 person years, the 7 IPA model HMOs experienced much higher use rates than the 3 group model plans (1,951 days per 1,000), the 7 staff model

TABLE IV.16

MEDIAN HOSPITAL UTILIZATION RATES COMPARED TO PROJECTED 1984 FEE-FOR-SERVICE
UTILIZATION RATES FOR PLANS CLASSIFIED BY HMO CHARACTERISTICS

Plan Characteristics	No.	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Demonstration Enrollees	Area FFS	Ratio of (1) to (2)	Demonstration Enrollees	Area FFS	Ratio of (4) to (5)	Demonstration Enrollees	Area FFS	Ratio of (7) to (8)
Plan Median	21	1,951	3,432	.57	269	303	.71	8.6	9.1	.81
Organizational Form										
- Group	3	1,951	4,016	.49	209	343	.61	9.3	10.6	.81
- Traditional/Network IPA	7	2,779	3,304	.70	390	308	.92	7.1	9.0	.72
- Staff	7	1,873	3,696	.48	264	369	.68	6.6	9.4	.73
- Mixed/Other	4	1,934	2,963	.65	230	342	.71	8.7	8.5	.99
Federally Qualified										
- Yes	19	1,935	3,432	.55	264	303	.69	8.7	9.0	.86
- No	2	3,312	3,738	.88	466	378	1.23	8.6	9.0	.86
Years in Operation										
- 5 or less	5	2,443	3,431	.70	317	366	.87	8.7	9.4	.95
- More than 5	16	1,901	3,430	.55	247	304	.67	8.1	9.1	.76
Profit Status										
- For profit	6	1,924	3,009	.63	223	341	.70	8.6	8.9	.95
- Not for profit	15	1,951	3,696	.55	287	306	.72	7.9	9.5	.79
Affiliation										
- Chain	9	1,986	3,304	.57	245	361	.72	9.1	9.7	.81
- Independent	12	1,868	3,396	.57	270	388	.70	8.1	8.8	.82
Non-demonstration Enrollment										
- Low	9	1,951	3,070	.69	239	339	.80	8.7	8.9	.88
- High	12	1,951	3,738	.55	269	367	.67	7.5	9.3	.72



TABLE IV.16 (continued)

Plan Characteristics	No.	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
		Demonstration Enrollees	Area FFS	Ratio of (11 to 12)	Demonstration Enrollees	Area FFS	Ratio of (14) to (15)	Demonstration Enrollees	Area FFS	Ratio of (17) to (18)
Demonstration Enrollment										
- Low	9	2,085	5,432	.65	290	366	.80	7.7	9.7	.76
- High	12	1,940	5,450	.91	264	387	.67	8.7	8.9	.92
Quarterly Growth Rate of Demonstration Enrollment										
- Low	12	1,943	5,468	.95	294	384	.67	8.6	8.9	.86
- High	9	2,085	5,395	.71	310	371	1.00	7.9	9.4	.81
Medicaid Enrollment										
- Unknown	5	1,700	5,809	.51	271	404	.57	8.6	8.5	.97
- Zero	14	2,046	5,396	.66	272	369	.79	8.7	9.1	.86
- Positive	4	1,832	5,835	.47	267	382	.65	6.6	9.8	.68
Disenrollment Rate										
- Unknown	2	3,312	5,758	.88	466	378	1.23	7.1	9.9	.72
- Low	9	1,951	4,016	.91	245	396	.64	9.3	9.7	.86
- High	10	1,898	5,505	.98	267	376	.72	7.6	8.9	.82
Death Rate										
- Unknown	4	2,572	5,008	.88	347	356	1.05	8.1	8.9	.86
- Low	7	1,986	5,534	.57	245	366	.72	8.6	9.4	.86
- High	10	1,901	5,547	.90	267	389	.65	8.3	9.2	.80
Patient Financial Incentives										
- Weak	9	1,829	5,597	.99	258	369	.72	8.7	8.9	.97
- Medium	11	1,986	5,807	.91	298	389	.68	7.7	9.4	.76
- Strong	1	2,779	5,595	.82	421	371	1.15	6.6	9.1	.72
Medical Group Financial Incentives										
- Weak	7	2,085	4,016	.90	264	371	.67	7.5	10.1	.72
- Medium	5	1,790	5,696	.48	269	369	.75	6.6	9.4	.75
- Strong	11	1,996	5,580	.64	272	384	.71	8.8	8.9	.98

TABLE IV.16 (continued)

Plan	Characteristics	No.	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Demonstration	Area	Ratio of	Demonstration	Area	Ratio of	Demonstration	Area	Ratio of
			Enrollees	FFS	(1) to (2)	Enrollees	FFS	(4) to (5)	Enrollees	FFS	(7) to (8)
HMO Financial Incentives											
- Weak	13	2,085	3,696	.63	310	371	.73	7.9	9.5	.79	
- Medium	6	1,893	3,302	.58	223	384	.63	8.7	8.8	.99	
- Strong	2	1,612	3,012	.53	251	337	.74	6.4	8.9	.71	
Decisionmaking Process											
- One decision-maker	3	1,790	3,696	.48	193	383	.68	6.6	9.4	.72	
- Small Group	11	2,007	3,397	.63	268	383	.70	8.7	8.7	.92	
- Staff consensus	5	2,369	3,393	.69	299	371	.87	7.2	9.3	.77	
Peer Interaction											
- Medium	14	1,960	3,396	.61	287	387	.71	7.5	8.9	.73	
- Strong	7	1,931	3,696	.49	227	361	.67	9.3	10.1	.84	
Quality Assurance											
- Weak	6	1,969	3,760	.53	260	364	.74	7.0	9.8	.73	
- Medium	10	1,901	3,601	.53	299	400	.68	8.2	9.3	.86	
- Strong	3	2,007	3,397	.69	243	339	.72	8.7	8.9	.98	
Utilization Controls											
- Medium	6	2,227	4,049	.55	266	366	.68	8.4	10.4	.76	
- Strong	13	1,929	3,380	.57	269	386	.71	8.6	8.9	.92	
Prior Medicare Enrollment											
- No	8	1,969	3,808	.53	289	387	.71	8.1	9.4	.76	
- Yes	13	1,935	3,380	.58	264	371	.71	8.7	8.9	.86	

NOTE: All use rates reported in this table are median values. Ratios of plan use rates to market area use rates for each category of plans were constructed as the median of the ratios for individual plans in that category.

plans (1,873 days per 1,000), and the 4 mixed/other model plans (1,934 days per 1,000). When plan use rates are measured relative to projected 1984 use rates in the fee-for-service sector of the local market area, the differences between IPA and group/staff plans persist, although the differences between IPA and mixed/other plans are narrowed considerably. Expressed as a percentage of local market area rates, the median use rates for each type of plan are: IPA, 70 percent; group, 49; staff, 48; mixed/other, 65.

Another strong relationship to emerge was that between the plans' hospital use rates and their management decision-making process. With a median use rate of 1,790 days per 1,000, the 5 plans with a single decision-maker experienced lower use rates than the 11 plans in which decisions are made by a small group of managers (2,007 days per 1,000) and the 5 plans in which decisions are reached by a staff consensus (2,369 days per 1,000). These differences persist when plan use rates are measured as a percentage of fee-for-service rates in the local market areas, with the following percentage observed for each category of plans: one decision-maker, 48 percent; small group of managers, 63 percent; staff consensus, 69 percent.

Both federal qualification status and operational experience were found to be related to hospital use rates under the demonstration. However, the generalizability of our findings for federal qualification status is limited by the fact that all but two of the plans are federally qualified. The 19 federally qualified plans experienced much lower use rates than the 2 non-federally qualified plans, both in absolute terms (1,935 versus 3,312 days per 1,000) and when measured as a percentage of

local market area rates (55 versus 88 percent). The 16 plans in operation for more than 5 years experienced lower hospital use rates than the 5 younger plans in both respects (1,901 versus 2,443 days per 1,000; and 51 versus 70 percent of local market area rates). However, differences were not observed across plans classified by whether they had prior experience serving Medicare beneficiaries. The 13 plans with prior Medicare experience had a median use rate of 1,935 days per 1,000 (or 59 percent of the local market area rate), compared to 1,969 days per 1,000 (or 53 percent of the local market area rate) for the 8 plans without prior Medicare experience.

Differences in hospital use rates were not observed for plans classified by for-profit status or chain affiliation. The 6 for-profit plans experienced 1,924 days per 1,000 (or 58 percent of use rates in the local market area), while the 15 not-for-profit plans experienced a nearly identical rate of 1,951 days per 1,000 (or 55 percent of local market area rates). The 9 chain-affiliated plans experienced hospital use rates similar to those of the 12 independent plans (1,986 versus 1,868 days per 1,000). For each category, plan use rates were 57 percent of local market area rates.

The next set of plan characteristics for which relationships with hospital use rates were examined reflect the plans' 1984 enrollment experiences, including: the number of demonstration enrollees at the end of the year, the number of nondemonstration enrollees at the end of the year, the average quarterly growth rate in demonstration enrollment during the year, and the annual disenrollment rate. The 12 plans with above average nondemonstration enrollments experienced hospital use rates similar

to those of the 9 smaller plans in absolute terms (1,958 versus 1,951 days per 1,000), although when measured as a percentage of use rates in the local market area, the plans with large nondemonstration enrollments experienced lower use rates than the smaller plans (51 versus 69 percent). Similar findings emerge when plans are classified by the size of their demonstration enrollments, although the magnitude of the observed difference in use rates is somewhat less.

The 9 plans that experienced higher than average quarterly rates of growth in demonstration enrollment during 1984 (in percentage terms) experienced hospital use rates similar to those of the slower growing plans (2,085 versus 1,943 days per 1,000). However, when plan use rates are measured as a percentage of local market area rates, the faster growing plans experienced higher use rates (71 versus 53 percent). Thus, plans which experienced a large influx of new enrollees in 1984 (and thus had relatively high quarterly growth rates) experienced higher hospital use rates relative to prevailing rates in their local market area than plans with a more stable enrollment. Differences in hospital use rates were not observed for plans classified by 1984 disenrollment rates. The 10 plans with above average disenrollment rates experienced 1,898 days per 1,000 (or 58 percent of local market area rates), while the 9 plans with below average disenrollment rates experienced a rate of 1,951 per 1,000 (or 51 percent of local market area rates).

Four of the plans included in the analysis enrolled Medicaid beneficiaries (who were not also eligible for Medicare). These plans experienced somewhat lower hospital use rates among demonstration enrollees than the plans without Medicaid-only beneficiaries (1,832 versus 2,046 days

per 1,000). The magnitude of this difference is increased when plan use rates are measured as a percentage of local market area rates (47 versus 66 percent).

We next examined the relationship between hospital use rates and the strength of the financial incentives facing HMO management, the medical group, and patients. Only in the case of the incentives facing HMO management did we find the expected pattern of declining use rates with stronger financial incentives. The 13 plans in which the financial incentives facing HMO management were rated as weak experienced 2,085 days per 1,000, which is higher than the rates experienced by the 6 plans in which incentives were rated as medium (1,895 days per 1,000) and the 2 plans in which incentives were rated as strong (1,612 days per 1,000). When plan use rates are measured as a percentage of local market area rates, the findings for plans classified by the financial incentives facing HMO management are: weak, 63 percent; medium and strong, each 53 percent.

The strength of the financial incentives facing the medical group did not have a consistent relationship with hospital use rates. The 11 plans which were rated as having strong incentives experienced somewhat higher use rates than the 3 plans with medium incentives (1,996 versus 1,790 days per 1,000) but rates similar to those of the 7 plans with weak incentives (1,996 versus 2,085 days per 1,000). The pattern remained inconsistent even after plan use rates were measured relative to fee-for-service use rates in the plans' local market areas.

The strength of the financial incentives facing patients was not related to the plans' hospital use rates. This finding was not unexpected however since none of the plans required a copayment for hospital services,

and our measure of patient financial incentives thus reflects differences across plans in copayment requirements for non-hospital services. The 9 plans with weak financial incentives for patients experienced similar hospital use rates as the 11 plans with medium incentives (1,929 versus 1,986 days per 1,000), while the one plan with strong incentives experienced higher use rates (2,779 days per 1,000). This pattern persists when plan use rates are measured as a percentage of local market area rates.

The final set of plan characteristics to be examined reflect the strength of the plans' peer interaction, quality assurance programs, and utilization controls. The 7 plans in which peer interaction was rated as strong experienced hospital use rates similar to those of the 14 plans with medium peer interaction (1,951 versus 1,960 days per 1,000), although when measured as a percentage of local market area rates, the plans with strong peer interaction had lower use rates (49 versus 61 percent). The 5 plans with strong quality assurance programs experienced a median hospital use rate of 2,007 days per 1,000, which was very similar to that experienced by the 10 plans with medium QA programs (1,901 days per 1,000) and the 6 plans with weak QA (1,969 days per 1,000). However, when plan use rates are measured relative to local market area areas, higher use rates were observed for plans with strong QA (69 percent for plans rated as strong versus 53 percent each for plans rated weak and medium). Finally, the 15 plans with strong utilization controls in place experienced somewhat lower use rates than the 6 plans with medium controls (1,929 versus 2,227 days per 1,000). However, this difference was eliminated when plan use rates were measured relative to those of the local market area.

To summarize, when plan use rates are measured relative to fee-for-service use rates in the local market area, HMOs with the lowest rates of hospital use are staff and group model plans, have one decision-maker, are federally qualified, have been in operation more than 5 years, have above average demonstration and nondemonstration enrollments, experienced a lower than average rate of growth in demonstration enrollment during 1984, have positive Medicaid-only enrollment, have medium or strong financial incentives facing HMO management, have strong peer interaction, and have weak or medium quality assurance programs. The extent to which these patterns are due to differences across plans in the ability to constrain use or to differences in the health status of the beneficiaries enrolled could not be determined from the available data, but will be explored in subsequent analyses once individual-level data become available.

As discussed above, our primary approach to the analysis of HMO utilization experience under the demonstration has been to treat the three separate market areas for IMC and the two separate market areas for AV-MED as distinct plans. To test the sensitivity of our findings to that approach, we have repeated key components of the analysis with IMC and AV-MED each treated as a whole (i.e., by including all market areas when defining a "plan"). This requires summing the enrollment and utilization data across market areas to get totals for IMC and totals for AV-MED. In Table A.1 of Appendix A, we present a replicated version of Table IV.16, which shows the relationship between hospital use rates and plan characteristics using this alternative approach to treating IMC and AV-MED. In conducting this analysis, we have defined the fee-for-service use rate for the total market of IMC as the weighted average of the use rates

in each of its three separate markets, where the weights represent the distribution of IMC's demonstration enrollees across its three markets at the end of 1984. The same procedure was applied to derive a total market area use rate for AV-MED. Comparison of Tables A.1 and IV.16 reveals that the two approaches to treating IMC and AV-MED yield overall median use rates that are nearly identical. Furthermore, these two approaches yield the same general conclusions regarding the relationship between hospital use rates under the demonstration and each of the plan characteristics we have considered. Thus, the findings of our analysis of hospital use rates presented above are not dependent on the specific approach adopted in treating the separate market areas of IMC and AV-MED. The analyses of HMO utilization experience discussed in the remainder of this report have been conducted with these separate market areas treated as distinct plans.

The final component of our analysis of hospital use rates under the demonstration involves investigating the relationship between plan use rates and the characteristics of the market areas in which they operate. As in our analysis of the relationship between use rates and HMO organizational and financial characteristics, we have adopted the median as the preferred measure of central tendency for this analysis. The first market area characteristic we examined, the presence of other local HMOs operating in the demonstration, was not strongly related to hospital use rates (see Table IV.17). The 15 plans operating in market areas with multiple plans participating in the demonstration experienced a median use rate nearly identical to that of the 6 plans which were the only participating HMOs in their areas (1,935 versus 2,018 days per 1,100). When plan use rates are measured relative to use rates in the fee-for-service sector

TABLE IV.17

MEDIAN HOSPITAL UTILIZATION RATES COMPARED TO PROJECTED 1984 FEE-FOR-SERVICE
 UTILIZATION RATES FOR PLANS CLASSIFIED BY MARKET AREA CHARACTERISTICS

Market Characteristic	No.	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
		(1) Demonstration Enrollees	(2) Area FFS	(3) Ratio of (1) to (2)	(4) Demonstration Enrollees	(5) Area FFS	(6) Ratio of (4) to (5)	(7) Demonstration Enrollees	(8) Area FFS	(9) Ratio of (7) to (8)
Plan Median	21	1,931	3,432	.57	269	363	.71	8.6	9.1	.81
Number of Demonstration HMOs										
- Single Plan	6	2,018	4,110	.52	287	408	.64	8.7	9.3	.79
- Multiple Plans	15	1,935	3,397	.59	267	363	.73	8.2	9.0	.86
Average Part A and B Reimbursement										
- Less than \$1,416	11	1,931	3,395	.55	243	361	.69	8.3	9.5	.80
- More than \$1,416	10	1,960	3,468	.58	269	390	.72	8.6	8.9	.92
Physicians per 100,000										
Residents										
- Less than 205.2	11	1,935	3,380	.63	270	366	.72	8.3	8.9	.84
- 205.2 or more	10	1,969	3,468	.58	264	390	.68	8.6	9.3	.79
Percent of Population Covered by Medicare										
- Less than 12.08	10	1,912	3,413	.53	278	382	.71	7.3	9.3	.76
- 12.08 or more	11	1,986	3,304	.59	231	363	.71	8.7	9.0	.92
Percent of Population Nonwhite										
- Less than 17.08	13	2,007	3,395	.63	238	361	.72	7.9	9.6	.79
- 17.08 or more	8	1,832	3,731	.50	287	400	.69	8.6	9.0	.89
Percent of Population Below the Poverty Line										
- Less than 10.5	12	1,943	3,354	.59	272	368	.72	7.9	9.6	.79
- 10.5 or more	9	1,986	3,397	.57	247	389	.69	8.6	9.0	.89
Population Per Square Mile										
- Less than 912.9	12	2,046	3,635	.61	310	384	.80	8.7	9.2	.92
- 912.9 or more	9	1,862	3,395	.49	238	369	.80	6.6	9.1	.72
Hospital Occupancy Rate										
- Less than 76.7	12	1,932	3,389	.55	247	386	.68	8.1	8.8	.80
- 76.7 or more	9	2,366	3,696	.69	272	369	.73	8.6	9.5	.81

TABLE IV.17 (continued)

Market Characteristic	No.	Hospital Days/1,000 Person Years			Hospital Admissions/1,000 Person Years			Average Length of Stay		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Demonstration Enrollees	Area FFS	Ratio of (1) to (2)	Demonstration Enrollees	Area FFS	Ratio of (4) to (5)	Demonstration Enrollees	Area FFS	Ratio of (7) to (8)
POP Membership Per 10,000										
Residents										
- Less than 330.8	8	2,368	3,195	.70	280	324	.72	8.3	9.0	.88
- 330.8 or more	12	1,943	3,791	.51	264	366	.67	8.6	9.4	.79
- Unknown	1	1,839	3,380	.55	--	446	--	--	7.6	--
IPA Membership Per 10,000										
Residents										
- Less than 62.7	11	2,007	3,397	.63	245	343	.67	8.7	8.9	.86
- 62.7 or more	9	1,929	3,696	.51	289	389	.76	7.1	9.4	.72
- Unknown	1	1,839	3,380	.55	--	446	--	--	7.6	--
Presence of a Health Care Coalition										
- Yes	6	1,745	2,915	.60	264	335	.71	8.6	8.6	.72
- No	14	2,046	3,608	.61	298	384	.71	8.6	9.5	.84
- Unknown	1	1,839	3,380	.55	--	446	--	--	7.6	--
Presence of a Private Utiliza- tion Review Program										
- Yes	3	1,700	3,304	.51	313	395	.68	7.1	8.4	.85
- No	17	1,986	3,304	.59	269	369	.72	8.6	9.4	.81
- Unknown	1	1,839	3,380	.55	--	446	--	--	7.6	--

NOTE: All use rates reported in this table are median values. Ratios of plan use rates to market area use rates for each category of plans were constructed as the median of the ratios for individual plans in that category.

of the local market area, the findings for the two categories of plans remain similar (59 percent for HMOs in multiple-plan areas versus 52 percent for those in single-plan areas).

Differences in hospital use rates were not observed for plans classified by the average Medicare reimbursement per beneficiary in the local market or by the percent of the local population covered by Medicare. Plans operating in areas with above average Medicare reimbursement experienced use rates nearly identical to those of plans operating in areas with below average reimbursement, both in absolute terms (1,960 versus 1,951 days per 1,000) and when measured as a percentage of use rates in the local market area (58 versus 55 percent). Plans operating in areas with an above average proportion of the population on Medicare experienced use rates similar to those of plans located in areas with a below average proportion of the population on Medicare in both respects (1,986 versus 1,912 days per 1,000; and 59 versus 53 percent of local market area rates).

Plans located in areas of above average hospital occupancy rates experienced higher hospital use rates than those located in areas of below average occupancy rates (2,366 versus 1,932 days per 1,000). This difference persists when plan use rates are measured as a percentage of local market area rates (69 percent for plans in areas of high occupancy rates compared to 56 percent for plans in areas of low occupancy rates). The plans' hospital use rates were found not to be significantly related to the number of physicians per 100,000 residents in the local market area.

Among the strongest relationships to emerge between market area characteristics and hospital use rates were those found for the total market share of PGP-HMOs in the area. Plans located in areas where PGPs

had an above average market share prior to the demonstration experienced lower hospital use rates than plans located in areas of below average PGP market share (1,943 versus 2,368 days per 1,000). This difference persists when plan use rates are measured as a percentage of local market area rates (51 percent for plans located in areas with an above average PGP market share prior to the demonstration, compared to 70 percent for plans located in areas where that market share was below average). Hospital use rates were less strongly related to the total market share of IPA-HMOs prior to the demonstration. Plans located in areas of above average market share for IPA-HMOs experienced a rate of 1,929 days per 1,000 (or 51 percent of local market area rates), while those located in areas of below average market share for IPA-HMOs experienced 2,007 days per 1,000 (or 63 percent of local market area rates).

Differences in hospital use rates were also observed for plans classified by whether private sector initiatives to contain health care costs were underway in the local market area prior to the demonstration. For example, plans operating in areas containing a health care coalition experienced lower hospital use rates than plans operating in areas without such a coalition, both in absolute terms (1,745 versus 2,046 days per 1,000) and when measured as a percentage of local market area use rates (50 versus 61 percent).

The final set of market area characteristics we examined are population density, the local poverty rate, and the percent of the population who are nonwhite. Plans located in areas with an above average population density (measured as population per square mile) experienced somewhat lower use rates than plans in areas with a below average popu-

lation density, both in absolute terms (1,862 versus 2,046 days per 1,000) and when measured as a percentage of local market area use rates (49 versus 61 percent). Differences of a similar magnitude were observed when plans were classified by the proportion of area residents who are nonwhite, with lower use rates observed for plans located in areas with an above average proportion of nonwhites. No differences in use rates were observed when plans were classified by the proportion of area residents below the poverty line.

To summarize, when plan use rates are measured relative to use rates in the fee-for-service sector of the local market area, plans with the lowest rates of hospital use are in areas where HMOs had achieved an above average market share prior to the demonstration, where a health care coalition was present, where hospital occupancy rates are below average, where the population density is above average, and where a high proportion of residents are nonwhite. Many of the market area characteristics we examined were not associated with hospital use rates under the demonstration. In particular, hospital use rates were not related to the average Medicare reimbursement per beneficiary or to the percent of the population covered by Medicare.

3. Utilization of Non-Hospital Services

In this section, we examine utilization rates among demonstration enrollees for services other than hospital care. These include ambulatory encounters, skilled nursing facility (SNF) care, home health agency (HHA) visits, emergency room visits, and various supplemental services offered by the plans which are not covered under Medicare (e.g. eye exams and eye-glasses, hearing exams and hearing aids, dental care, and prescription

drugs). Because data on use rates in the local market areas are not available for these services, this component of our analysis is limited to a comparison of utilization experience across plans.

The HMOs experienced a broad range of use rates for most non-hospital services (Table IV.18). Among the 18 plans for which data on ambulatory encounters were available, encounters per person year ranged from 2.0 to 15.3, with a plan mean of 9.0 and a median of 9.1.¹ Nearly 90 percent of the plans experienced between 6 and 13 ambulatory encounters per person year. Fifteen plans reported data on the use of SNF services, and among these, use rates ranged from 0 to 783 days per 1,000 person years. The plans experienced a mean of 326 and a median of 234 SNF days per 1,000. SNF discharge rates ranged from 0 to 132 per 1,000 person years, with a mean of 20 and a median of 10 discharges per 1,000. Fifty percent of the plans experienced fewer than 30 SNF discharges per 1,000 person years.

Data on home health agency (HHA) visits are available for 13 plans. Among these plans, use rates ranged from 0 to 1.06 visits per person year, while the overall plan mean of 0.43 was very close to the median of 0.46 per person year. Among the 17 plans which reported data on emergency room visits, use rates ranged from 0 to 0.90 visits per person year, with a plan mean of 0.18 and a median of 0.11 per person year.

¹Ambulatory encounters have been broadly defined to include all those with medical, podiatric, and mental health professionals, including encounters with nurse practitioners and physician assistants that are not incident to seeing a physician. Dental, optometric, and audiology encounters have been excluded.

TABLE IV.18
UTILIZATION RATES FOR NON-HOSPITAL SERVICES BY PLAN

Health Plan	Ambulatory Encounters/ member year	SNF Disc./ 1,000 member years	SNF Days/ 1,000 member years	HHA Visits/ member year	Emergency Room Visits/ member year	Hearing Services/ Member Year		Vision Services/ Member Year		Dentist Visits/ member year	Prescriptions/ member year
						Exams	Aids	Exams	Glasses		
Plan Mean	9.1	20.2	326.2	0.43	0.18	0.05	0.05	0.51	0.25	0.36	13.6
Plan Median	9.0	10.3	234.1	0.46	0.11	0.05	.0	0.51	0.05	0	12.8
Plan A	11.5	--	--	0.45	0.30	0.00	0.00	0.00	0.00	0.00	2.3
Plan B	9.0	--	--	0.07	0.09	0.00	0.00	0.00	0.00	0.00	2.6
Plan C	10.1	10.8	465.0	0.34	0.90	0.08	0.01	0.98	0.44	0.63	14.2
Plan D	11.9	9.0	132.3	0.80	0.19	0.02	0.08	1.36	0.94	2.77	18.9
Plan E	2.0	--	--	--	0.36	0.00	0.00	0.00	0.00	0.00	3.9
Plan F	6.9	28.1	300.7	0.50	0.10	0.20	0.12	0.45	0.27	--	12.1
Plan G	--	17.1	208.6	0.50	0.10	0.20	0.12	0.45	0.37	--	12.1
Plan H	--	18.6	224.8	0.36	0.11	0.22	0.13	0.51	0.42	--	13.5
Plan I	7.7	5.7	62.6	--	0.23	--	--	0.70	0.00	0.00	9.7
Plan J	7.9	7.4	218.7	--	0.05	0.08	0.00	0.67	0.00	0.00	12.0
Plan K	12.1	--	--	--	0.12	--	--	--	--	--	--
Plan L	7.1	--	547.5	--	0.01	0.05	0.00	--	0.24	0.01	13.9
Plan M	6.6	8.1	312.4	0.18	0.11	0.05	0.00	0.64	0.00	0.00	13.6
Plan N	7.0	57.5	785.2	1.05	--	0.01	0.00	0.17	0.01	0.27	11.9
Plan O	--	--	--	--	--	--	--	--	--	--	--
Plan P	--	--	--	--	--	--	--	--	--	--	--
Plan Q	9.4	0.0	0.0	0.07	0.09	--	0.00	0.75	0.00	0.00	25.3
Plan R	8.8	20.9	173.5	0.47	0.16	0.07	0.00	1.04	1.37	0.17	22.1
Plan S	--	--	--	--	--	--	--	--	--	--	--
Plan T	10.1	9.9	597.2	0.11	0.10	--	0.01	--	--	--	25.9

TABLE IV.18 (continued)

Health Plan	Ambulatory Encounters/ member year	SHF	SHF	HHA Visits/ member year	Emergency Room Visits/ member year	Hearing Services/ Member Year		Vision Services/ Member Year		Dentist Visits/ member year	Prescrip- tions/ member year
		Disc./ 1,000 member years	Days/ 1,000 member years			Exams	Aids	Exams	Glasses		
Plan U	15.3	132.4	394.5	0.07	0.07	0.05	0.00	0.52	0.35	0.00	8.9
Plan V	12.3	14.5	243.4	--	--	0.13	--	--	0.01	1.55	22.4
Plan W	13.0	--	--	--	--	0.00	0.00	0.00	0.00	0.00	--
Plan X	--	--	--	--	--	--	--	--	--	--	--

Nearly 90 percent of the plans experienced 0.3 or fewer emergency room visits per person year.

The supplemental service offered by the largest number of plans was coverage for outpatient prescription drugs. Among the 18 plans that reported positive utilization, use rates ranged from 2.3 to 25.9 prescriptions per person year, with a plan mean of 13.6 and a median of 12.8 per person year. Thirteen plans experienced over 10 prescriptions per person year, while four experienced over 20 per person year. Three plans experienced fewer than 4 prescriptions per person year. It is not known whether this broad range of use rates for prescription drugs accurately reflects the range of plan experiences or whether it reflects differences among plans in the accuracy of the Quarterly Report data.

Among the 12 plans that both offered coverage for eye exams and reported positive utilization data, use rates ranged from 0.45 to 1.56 exams per person year, with a plan mean of 0.70 per person year. Seventy-five percent of these plans experienced use rates for eye exams in the range of 0.45 to 0.75 per person year. Eye exams as defined in the Quarterly Reports were intended to be limited to exams for the purpose of prescribing eyeglasses. However, since two plans reported more than one exam per person year, and since both of these plans limited enrollees to one pair of eyeglasses per year, the computed use rates for these plans most likely reflect data problems. Of the 10 plans that reported dispensing eyeglasses, use rates ranged from 0.01 to 1.37 eyeglasses per person year, with a plan mean of 0.45 per person year. Sixty percent of the plans dispensed eyeglasses at rates in the range of 0.20 to 0.45 per person year. The value computed for one plan of over one pair of eye-

glasses per person year should be viewed with skepticism, particularly since this plan independently reported that it limits enrollees to one pair per year.

Twelve plans reported positive utilization data for audiological exams, and among these plans, use rates ranged from 0.01 to 0.22 exams per person year, with a plan mean of 0.10 per person year. Among the six plans that reported dispensing hearing aids in 1984, use rates ranged from 0.01 to 0.14 per person year, with a plan mean of 0.08 per person year. Finally, six plans reported positive utilization of dental care, and among these plans use rates ranged from 0.01 to 2.77 visits per person year, with a plan mean of 0.90 per person year.

D. HMO FINANCIAL PERFORMANCE

In this section HMO financial performance is examined for 24 plans with any financial data for the four quarters of 1984. The tables which follow show total net revenues before taxes per enrollee (Medicare demonstration enrollees and all other non-demonstration enrollees separately) by quarter and 1984 year summary. Also shown by plan are total revenues, total expenses, and service expenses by type of expense.

1. Sources and Limitations of the Data

While these data provide the most comprehensive picture available to date of HMO financial experience in the National Medicare Competition Demonstration, they must be viewed with caution for several reasons.

First, it should be recognized that the data represent initial HMO experience. All of the plans were at an initial level of experience in the risk-based Medicare market, with only four plans having 12 to 18 months of experience before 1984, the period of time represented by these data.



TABLE IV.19 (continued)

Plan	1984 01	1984 02	1984 03	1984 04	Year Summary ¹
Plan I					
Demonstration	10	109	130	-17	228
Nondemonstration	1	-3	21	8	28
Plan J					
Demonstration	-1	1	-17	-196	-276
Nondemonstration	-2	5	6	-28	-21
Plan K					
Demonstration	--	-4	-47	-33	-131
Nondemonstration	--	--	--	--	--
Plan L					
Demonstration	33	54	69	37	191
Nondemonstration	--	--	--	--	--
Plan M					
Demonstration	84	-55	34	28	92
Nondemonstration	9	16	17	16	59
Plan N					
Demonstration	31	-10	22	-97	-95
Nondemonstration	--	28	29	22	105
Plan O					
Demonstration	--	-108	-88	--	-382
Nondemonstration	-3	-2	-19	--	-34
Plan P					
Demonstration	167	128	566	370	1,457
Nondemonstration	1	-6	-4	-2	-11
Plan Q					
Demonstration	--	-894	-47	-151	-896
Nondemonstration	16	3	9	9	36
Plan R					
Demonstration	28	-44	-77	-51	-175
Nondemonstration	13	10	25	13	61
Plan S					
Demonstration	--	302	141	--	790
Nondemonstration	--	4	29	--	71
Plan T					
Demonstration	43	-64	355	--	470
Nondemonstration	20	21	18	--	79

TABLE IV.19 (continued)

Plan	1984 01	1984 02	1984 03	1984 04	Year Summary ¹
Plan II					
Demonstration	1	32	-64	37	6
Nondemonstration	1	3	8	6	18
Plan V					
Demonstration	--	-252	-204	-127	-625
Nondemonstration	--	--	--	--	--
Plan W					
Demonstration	--	94	26	77	236
Nondemonstration	--	0	21	-15	9
Plan X					
Demonstration	--	99	56	162	480
Nondemonstration	--	--	--	--	--

¹Year Summary does not always sum from quarterly figures because of methods for imputing missing data. See explanation in text.

largest net revenues per demonstration enrollee also had a small surplus (\$1 per enrollee) among non-demonstration enrollees. The plan with the largest net revenues (\$20) among non-demonstration enrollees also had a surplus among demonstration enrollees (\$43) in the first quarter.

Only six of the 24 plans had no deficits in all reported quarters (excluding plans reporting only one quarter). Thus, most of the plans had at least one deficit quarter among demonstration enrollees. Among the 20 plans reporting data for three or more quarters, five had deficits in every quarter. The quarter to quarter patterns do not follow the expected pattern: i.e. early quarters with deficits, changing to surpluses that increase each quarter as experience is gained and start-up costs are recovered. Instead, a more erratic experience emerges.

In part, such an erratic pattern is not unexpected in these data because some of the plans had previous cost-reimbursement experience with Medicare, and the first quarter shown is not the initial quarter but the second, third or fourth quarter for some plans (see Table IV.1 for initial beginning dates for each plan). Similarly, enrollment surges may distort an otherwise normally expected trend in quarterly net revenues. Marketing expenses might be incurred in one quarter which do not lead to enrollment growth until the next quarter. In general, the quarter to quarter data for net revenues appear to reflect the random experiences and differential stages of development of each plan. No clear trends are detected.

The year summary estimates for 1984 indicate that the median plan experienced net revenues per demonstration enrollee of \$-5 over the four-quarter period. Twelve of the plans had actual or imputed annual deficits for 1984 and 12 plans had actual or imputed annual surpluses. The range of

annual deficits was from \$16 per enrollee to \$1,758 per enrollee, while the range of annual surpluses was from \$6 per enrollee to \$1,457 per enrollee. As with the quarter-to-quarter experience, the plans varied substantially in their annual net revenue experience.¹

3. Components of Total Expenses

Per enrollee revenue and expense experience on an annual basis is shown in Table IV.20. When plans had less than four quarters experience, or reported less than four quarters experience, annual estimates were imputed as described previously.

The median total annual revenue per enrollee was \$2,312 across all plans compared to median annual expenses per enrollee of \$2,250. The median difference between revenues, from all sources, and expenses was -\$5 per enrollee on an annual basis.

Annual revenues per enrollee ranged from a low of \$1,160 to a high of \$3,537, a three-fold difference. It should be emphasized that a number of factors can account for this wide range of total revenues per enrollee. Variation in the risk-based payment from HCFA (95 percent of the AAPCC) can make a substantial contribution to per enrollee total revenues. In addition, most plans require some copayments for services and premiums, which supplement the HCFA payments on behalf of beneficiaries.

¹In general, the conclusions reached above regarding the plans' net revenue experience under the demonstration do not change significantly when the alternative approach to treating the separate market areas of IMC and AV-MED is adopted (i.e., when IMC and AV-MED are each treated as a single observation). With this change, 11 plans had annual surpluses and 10 incurred deficits. Appendix A compares in more detail the results obtained from the two alternative approaches.

TABLE IV.20

TOTAL REVENUES AND EXPENSES ALLOCATED TO MEDICARE DEMONSTRATION ENROLLEES

Plan	Total Revenue Per Enrollee	Total Expenses Per Enrollee	Net Revenue Per Enrollee	Service Expenses by Type (Percentage Distribution)			
				Medical	Institutional	Supplementary	Administration and Other
All Plans Median ¹	\$2,312	\$2,250	\$-5	31.1%	44.7%	5.5%	12.7%
Mean	2,336	2,340	-4	31.6	42.3	7.1	19.0
Plan A	2,966	2,982	-16	41.2	43.4	5.7	9.6
Plan B	1,895	1,944	-49	42.4	39.6	9.3	8.8
Plan C	2,272	2,229	43	22.6	22.4	9.4	45.7
Plan D	2,709	2,892	-183	12.8	60.0	8.0	19.2
Plan E	2,877	4,635	-1,758	16.2	25.7	33.4	24.7
Plan F	3,537	3,056	482	33.9	46.4	6.1	13.6
Plan G	2,378	2,315	63	31.2	46.2	3.5	19.1
Plan H	1,721	1,762	-41	26.6	45.4	4.2	23.9
Plan I	2,195	1,967	228	27.9	53.1	9.3	9.7
Plan J	2,448	2,724	-276	30.4	59.1	4.1	6.4
Plan K	1,968	2,099	-131	--	--	--	--
Plan L	2,462	2,271	191	--	--	--	--
Plan M	1,908	1,816	92	33.1	53.9	5.3	7.8
Plan N	2,799	2,895	-95	31.0	44.1	5.0	19.8

TABLE IV.20 (continued)

Plan	Total Revenue	Total Expenses	Net Revenue	Service Expenses by Type (Percentage Distribution)			
	Per Enrollee	Per Enrollee	Per Enrollee	Medical	Institutional	Supplementary	Administration and Other
Plan O	1,160	1,542	-382	22.9	21.4	2.6	53.1
Plan P	2,586	1,128	1,457	44.1	8.7	1.0	46.2
Plan Q	2,773	3,668	-896	34.2	24.7	6.0	35.1
Plan R	2,351	2,526	-175	43.4	41.3	7.2	8.1
Plan S	1,533	743	790	48.7	25.7	1.1	24.4
Plan T	3,531	3,061	470	25.6	57.6	13.3	3.5
Plan U	2,182	2,177	6	44.4	43.1	3.8	8.7
Plan V	1,919	2,544	-625	28.4	50.6	9.4	11.6
Plan W	1,737	1,501	236	32.8	55.8	5.3	6.1
Plan X	2,156	1,676	480	22.4	61.9	3.9	11.8

¹ Medians for percents do not sum to 100.

Annual total expenses per enrollee ranged from \$743 to \$4,635. The plans were at different stages of development in 1984, thus expenses per enrollee reflect differences in plans in terms of ability to control expenses, the accounting treatment and level of start-up costs, and the level of enrollment.

Table IV.20 also shows the percent distribution of expenses by type of expense: medical, institutional, supplementary, and administrative and other. These were defined in Chapter III. The average beneficiary expense experience (in percent) across all the plans with data compared to the Medicare program nationally is as follows:

Service Expense	Risk-Based Demonstrations	FFS Medicare*
	Percent	
Medical	31.6	22.7
Institutional	42.3	69.4
Supplementary	7.1	5.4
Administrative and other	19.0	2.4

*Source: Levit, Katherine R., et al. "National Health Expenditures, 1984" Health Care Financing Review. 7/1 (Fall 1985) 1-36.

This comparison excludes the administrative expenses for HCFA of managing the risk-based payments, but this should be minimal compared to the claims processing function associated with administering the fee-for-service Medicare program. Medical expenses and administrative and other expenses are higher as a percent of total expenses for the risk-based Medicare plans compared to fee-for-service Medicare. Institutional expenses, including primarily hospital plus long-term care expenses, are substantially lower on average for the risk-based plans compared to fee-for-service Medicare.

Supplementary expenses are somewhat higher for the risk-based plans compared to fee-for-service Medicare. The mix of supplementary services is different because in most cases the demonstrations expanded the coverage of ambulatory care, prescribed medicines, hearing aids, eyeglasses, and other supplementary services for enrollees while fee-for-service Medicare does not cover these services at all.

The experience of the plans varied remarkably in terms of the percent of expenses by type of service. The fact that the plans were at different stages of development may account for the large disparity. Medical service expenses as a percent of total expenses ranged from 12.8 percent to 48.7 percent. Institutional expenses ranged from 8.7 to 61.9 percent. The range of supplementary expenses was more narrow; from 1.0 percent to 13.3 percent (except for one plan which had supplementary expenses of 33.4 percent). Administration and other expenses ranged from 3.5 to 53.1 percent.

It is difficult to speculate about the large differences in the percent of expenses by type of expense. Some plans with relatively higher medical expenses were in the early stages of enrollment and might have been involved in initial ambulatory care examinations and physicals for their new enrollees. Some plans with very high institutional expenses were small, where the impact of a few high cost hospitalizations could have a large relative impact. Others may have been in a very competitive market with extensive benefits and low cost sharing that would encourage new enrollees with problems expecting hospitalization. The reason for the differences are not apparent, however, and may be attributable to differences in definitions of expense categories at the plan level, even

though uniform definitions were provided to the plans when the data were collected.

4. Detailed Expenses by Quarter

The next four tables show quarterly trends in expenses by type of service. The quarterly experience in terms of expenses showed no consistent patterns. In this quarter-to-quarter data, we expect declining expenses as the plans gained experience and controlled use and cost after initial implementation.

Medical expenses per enrollee are shown in Table IV.21 by quarter for each plan. A declining expense pattern is defined as lower per enrollee medical expenses from the first quarter shown compared to the last quarter shown. Only three plans showed such a decline, with 18 plans indicating an increase in quarter-to-quarter medical expenses, among plans with at least two quarters of data. The increasing trend across quarters is also seen in the mean experience for all plans shown in Table IV.21, though an increase is less pronounced in the median values. Annual medical expenses per enrollee ranged from \$353 to \$1,337 and had a median value of \$720.

Institutional expenses (Table IV.22) did not show the same clear increase from quarter-to-quarter. A total of seventeen plans had increases in per enrollee institutional expenses, compared to six plans with declines. That is a two-to-one ratio of increasing institutional expense experience through 1984, but the increases are not large and the results are more varied than with medical expenses. Using second quarter results compared to the last quarter available, for example, 12 plans had quarter-to-quarter increases, compared to 9 plans with declines. The overall plan

TABLE IV.21
MEDICAL EXPENSES PER MEDICARE DEMONSTRATION ENROLLEE
PER QUARTER BY HMO

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
All Plans					
Median	156	183	147	176	720
Mean	154	181	178	213	743
Plan A	254	274	--	441	1,337
Plan B	147	209	--	331	876
Plan C	--	--	--	--	503
Plan D	151	165	147	142	604
Plan E	--	209	264	314	1,128
Plan F	211	410	147	278	1,035
Plan G	156	342	55	169	721
Plan H	99	183	64	132	468
Plan I	142	126	134	128	525
Plan J	185	198	183	247	829
Plan K	--	--	--	--	--
Plan L	--	--	--	--	--
Plan M	146	176	122	162	600
Plan N	248	308	338	21	817
Plan O	--	114	72	--	353
Plan P	51	42	140	142	498
Plan Q	--	123	290	396	1,253
Plan R	166	257	314	304	1,096
Plan S	--	43	116	--	362
Plan T	182	201	203	--	784

TABLE IV.21 (continued)

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
Plan U	179	203	334	234	967
Plan V	--	109	198	183	720
Plan W	--	59	119	140	492
Plan X	--	44	146	75	375

TABLE IV.22

INSTITUTIONAL EXPENSES PER MEDICARE DEMONSTRATION
ENROLLEE BY QUARTER BY HMO

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
All Plans					
Median	240	268	252	271	1,038
Mean	221	344	252	267	1,088
Plan A	311	382	--	359	1,408
Plan B	157	251	--	225	819
Plan C	--	--	--	--	498
Plan D	245	2,316	245	28	2,845
Plan E	--	329	580	382	1,789
Plan F	261	600	262	311	1,418
Plan G	157	459	260	196	1,067
Plan H	151	280	181	187	800
Plan I	195	134	238	358	1,000
Plan J	275	334	370	541	1,610
Plan K	--	--	--	--	--
Plan L	298	309	293	294	1,192
Plan M	211	309	229	240	978
Plan N	242	313	309	292	1,161
Plan O	--	92	76	--	329
Plan P	96	1	35	24	98
Plan Q	--	114	146	332	908
Plan R	237	256	267	271	1,044
Plan S	--	6	70	--	191

TABLE IV.22 (continued)

Plan	1984 01	1984 02	1984 03	1984 04	Year Summary
Plan T	430	538	356	--	1,763
Plan U	272	238	217	222	938
Plan V	--	141	333	340	1,282
Plan W	--	57	227	229	838
Plan X	--	97	351	244	1,038

median increased from \$240 per enrollee in the first quarter to \$271 per enrollee in the fourth quarter. The median value of institutional expenses for the year was \$1,038.

Supplemental service expenses per enrollee are more difficult to characterize because a number of plans reported no such expenses in many quarters of the year (Table IV.23). They also tended to be much lower than medical and institutional expenses, thus it would be more difficult to observe trends. Again, however, the data support an increasing trend, with 11 plans with data showing an increase in per enrollee expenses, only three plans showing a decrease, and three plans showing no change. Median and mean per enrollee expenses for supplementary services overall showed a clear upward trend over the four quarters with a median \$154 for the year.

Administrative types of expenses would be expected to decline as start-up costs are paid while the plans gain experience. The data suggest that this is so, because a declining trend in quarter-to-quarter expenses was more frequently observed for administrative expenses per enrollee than for other expense categories (Table IV.24). Twelve plans showed increasing administrative and other expenses compared to 9 plans with declining expenses in this category and one plan that experienced no change. The median shows no particular pattern, however. Administrative and other expenses per enrollee had a median of \$295 for the year.

5. Net Revenues by Plan Characteristics

In this section, we examine median annual net revenues before taxes per enrollee for groups of plans classified by selected HMO characteristics. The plan characteristics examined range from the organizational form of the plan to the financial incentives established for the physicians in the practice. Given the small number of observations in each cell, the

TABLE IV.23

SUPPLEMENTAL BENEFITS EXPENSES PER MEDICARE
DEMONSTRATION ENROLLEE BY QUARTER BY HMO

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
All Plans					
Median	23	25	35	40	154
Mean	27	31	47	55	213
Plan A	46	48	--	46	186
Plan B	42	53	--	51	192
Plan C	--	--	--	--	209
Plan D	84	98	98	98	380
Plan F	--	--	--	382	1,530
Plan F	9	40	113	14	185
Plan G	0	0	84	0	82
Plan H	0	0	58	0	73
Plan I	40	42	47	45	176
Plan J	23	25	24	36	111
Plan K	--	--	--	--	--
Plan L	--	--	--	--	--
Plan M	25	25	21	25	96
Plan N	0	20	20	71	133
Plan O	--	13	9	--	41
Plan P	0	1	15	0	11
Plan Q	--	26	74	50	221
Plan R	32	48	48	48	182
Plan S	--	2	2	--	8

TABLE IV.23 (continued)

Plan	1984 01	1984 02	1984 03	1984 04	Year Summary
Plan T	86	105	112	--	407
Plan U	16	15	22	28	83
Plan V	--	30	48	67	239
Plan W	--	0	23	22	80
Plan X	--	20	21	12	65

TABLE IV.24

ADMINISTRATIVE AND OTHER EXPENSES PER MEDICARE
DEMONSTRATION ENROLLEE FY QUARTER BY HMO

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
All Plans					
Median	54	60	76	54	295
Mean	76	196	91	98	453
Plan A	73	113	--	54	312
Plan B	61	51	--	18	182
Plan C	--	--	--	--	1,018
Plan D	183	258	203	261	910
Plan E	--	1,447	236	303	1,719
Plan F	83	114	81	133	417
Plan G	66	183	73	116	441
Plan H	71	148	79	115	421
Plan I	37	44	44	51	182
Plan J	39	47	46	41	173
Plan K	--	--	--	--	--
Plan L	28	16	17	13	74
Plan M	36	33	36	36	142
Plan N	125	90	109	175	523
Plan O	--	266	166	--	819
Plan P	315	55	137	138	521
Plan Q	--	1,041	214	175	1,286
Plan R	48	64	36	58	205
Plan S	--	53	41	--	181
Plan T	27	27	28	--	108

TABLE IV.24 (continued)

Plan	1984 Q1	1984 Q2	1984 Q3	1984 Q4	Year Summary
Plan U	30	18	83	53	189
Plan V	--	210	109	44	295
Plan W	--	9	20	28	92
Plan X	--	25	57	51	198

questionable quality of some of the data, and the fact that causal relationships are not being investigated, we do not conduct statistical tests of the equivalence of revenues across categories. Nevertheless, these data provide the best available picture of the financial experience of risk-based plans enrolling Medicare beneficiaries.

It is important to emphasize that our analysis of the relationship between plan characteristics and HMO financial experience under the demonstration is purely descriptive in nature. The financial performance of a given HMO under the demonstration depends on a variety of factors, and some of these factors, such as the impact of the plan on service use and the nature and extent of biased selection, cannot be measured with the available data. To isolate the effect of a particular plan characteristic on financial performance would require a multivariate model which would allow us to control for other relevant factors. Since there are too few HMOs to conduct such an analysis, it is not possible to determine which characteristics actually influence financial performance, or the direction or magnitude of such effects. Indeed, the relationships observed for any particular plan characteristic may reflect the influence on financial performance of other factors rather than the effect of the particular characteristic being examined. Thus, the findings presented below should be regarded as preliminary and should be interpreted with caution.

As indicated previously, half of the 24 plans examined experienced positive net revenues and half had negative, yielding a median net revenue of -\$5 (see Table IV.20). However, the number of plans included in the analysis of net revenues by plan characteristics varies with the characte-

ristic, due to missing data on some of the classifying variables (e.g. enrollment). Such differences in the set of plans included occasionally leads to medians for groups of plans defined by a specific characteristic that appear to be inconsistent with the overall median. The number of plans included in each category is given in the table so that it will be apparent when not all 24 plans could be used.

Substantial differences in net revenues are observed according to the organizational form of the plan (Table IV.25). Group, traditional IPA and mixed/other models tended to experience substantial positive net revenues, with the medians for those categories ranging from \$11 to \$191 per enrollee in 1984. In contrast, the staff models were more likely to experience negative net revenues. The traditional IPA models were able to generate a surplus of \$110 per enrollee on an annual basis compared to the staff model plans which experienced deficits (\$-175).

Only three plans reporting financial data were not federally qualified, but these three had negative net revenues (\$-131) whereas plans that were federally qualified had a surplus of \$6. Chain affiliation had little or no apparent relationship with the financial experience of the plans.

While we might expect to observe more favorable financial results under the demonstration among plans with the greatest operational experience, such a pattern did not emerge. In fact, among plans classified by years of operational experience, those with 9 or more years of experience exhibited the poorest financial performance, with a median net revenue per enrollee of \$-95. The for-profit plans as a group had better financial results than the not-for-profit plans. The not-for-profits had a

TABLE IV.25

ANNUAL NET REVENUE PER DEMONSTRATION ENROLLEE
BY ORGANIZATIONAL CHARACTERISTICS

Plan Characteristics	N	Annual Net Revenue Per Enrollee Median
Organizational Form		
- Group	3	191
- Traditional/Network IPA	10	110
- Staff	7	-175
- Mixed/Other	4	11
Federally Qualified		
No	3	-131
Yes	21	6
Years Operational		
- 3 Years or Less	4	304
- 4 - 6 Years	9	-16
- 7 - 8 Years	6	127
- 9 Years or More	5	-95
Profit Status		
- Not for Profit	18	-45
- For Profit	6	14
Affiliation		
- Independent	14	1
- Chain	10	-5
Nondemonstration Enrollment		
- Low	7	-41
- High	10	-45
Demonstration Enrollment		
- Low	10	-19
- High	11	-16
Average Quarterly Growth Rate in Demonstration Enrollment		
- Low	12	-5
- High	12	25

TABLE IV.25 (continued)

Plan Characteristics	N	Annual Net Revenue Per Enrollee Median
Medicaid Enrollment		
- No Medicaid Enrollees	14	24
- Serves Medicaid Enrollees	4	-135
Disenrollment Rate		
- Low	9	191
- High	10	-45
Death Rate		
- Low	6	-33
- High	14	67
Patient Financial Incentives		
- Low	10	53
- Medium	12	-33
- Strong	2	416
Medical Group Financial		
- Low	7	-131
- Medium	4	-70
- Strong	12	210
HMO Financial Incentives		
- Low	16	-62
- Medium	6	53
- Strong	2	-33
Decision Making Process		
- Executive Director/One Person	5	-16
- Small Group of Top Management	13	6
- Management-Staff by Consensus	6	27
Peer Interaction		
- Medium	16	-29
- Strong	8	49
Quality Assurance		
- Low	6	-33
- Medium	13	191
- High	5	-41
Utilization Controls		
- Medium	7	-131
- Strong	17	43

TABLE IV.25 (continued)

Plan Characteristics	N	Annual Net Revenue Per Enrollee Median
Annual Hospital Admissions per 1,000 Enrollees ¹		
- Low	10	25
- High	9	-183
Annual Hospital Days per 1,000 Enrollees ¹		
- Low	10	-5
- High	9	-131
Annual Ambulatory Visits per 1,000 Enrollees		
- Low	9	-49
- High	9	-16

¹Plan hospital use rates are measured relative to fee-for-service use rates in the local market area.

negative median net revenue (\$-45) and the for-profits experienced a positive median net revenue of \$14 per enrollee in 1984.

A number of financial incentives and organizational controls intended to affect use and cost of service are shown in Table IV.25. One would expect better financial results as the financial incentives and organizational controls are stronger (See Section IV.A for definitions), and in several cases this can be observed. For example, with a median net revenue per enrollee of \$210, plans in which the financial incentives facing the medical group were rated as strong experienced more favorable financial results than those in which incentives were rated as medium (\$-70) or weak (\$-131). In the case of financial incentives facing patients and HMO management, the results must be put in perspective since only two plans are represented in the strong incentive category. However, we did observe the expected trend across the remaining two categories in the case of financial incentives facing HMO management, with plans rated as medium experiencing a surplus per enrollee of \$53 while those rated as weak experienced a deficit per enrollee of \$62. Differences in plans by quality assurance procedures had mixed results for net revenues. One clear finding is that plans with strong utilization controls had positive net revenues (\$43) and plans with medium controls had negative net revenues (-\$131). Plans with a management staff that operated by consensus had positive net revenues overall (\$27) compared to plans with a sole decision maker (\$-16) or small group of managers (\$6). Where peer interaction was strong, positive net revenues of \$49 were found compared to plans with medium peer interaction (\$-29).

The next set of plan characteristics reflect the enrollment experience of the plans. While we might expect to observe more favorable financial performance among larger plans because of possible economies of scale, such a pattern did not emerge. Differences in net revenue per demonstration enrollee were not found for plans classified either by the level of demonstration enrollment or by the level of nondemonstration enrollment. We next examined median net revenue per enrollee for plans classified by the average quarterly growth rate in demonstration enrollment during 1984. Previous studies on the under 65 population have found evidence of a start-up effect in which new HMO enrollees experience relatively high initial use rates as they explore the benefits of the plan and undergo screening and treatment for pre-existing illnesses. Thus, to the extent such a start-up effect exists among Medicare enrollees, we might expect to observe poorer financial performance among plans that experienced a large influx of new enrollees in 1984 (and thus had relatively high growth rates) than among plans with a more stable enrollment. However, such a pattern did not emerge. In fact, plans in which the demonstration enrollment grew at a high rate in 1984 experienced a higher median net revenue per enrollee than those which experienced a lower growth rate (\$25 versus \$-5). Although the underlying reasons for this finding could not be determined from the available data, it does suggest that HMOs can experience a large influx of Medicare enrollees without suffering adverse financial consequences.

Several plans also enrolled Medicaid eligibles in addition to their employment group based enrollment. Plans enrolling Medicaid eligibles had extremely high negative net revenues per enrollee (\$-135). Disenrollment

rates appear to be associated with financial experience, since plans with low disenrollment rates had large positive net revenues (\$191) compared to plans with high disenrollment rates who had large negative net revenues (\$-45).

The final set of demonstration characteristics shown are hospital and ambulatory service use rates. The two measures of hospital use examined -- admissions per 1,000 person years and days per 1,000 -- are both defined relative to use rates in the fee-for-service sector of the local market area as described above in Section IV.C. As expected, plans which had low hospital use rates relative to those of the local market area, whether measured in terms of admissions or days of care, experienced more favorable financial results under the demonstration. For example, the 10 plans classified as having low admission rates experienced a median net revenue per enrollee of \$25, compared to a median net revenue of \$-183 for the 9 plans with high admission rates. Similar differences, although of a smaller magnitude, were found for plans classified by the number of days of care per 1,000 enrollees. Plans with low rates of hospital days per 1,000 experienced a median net revenue of \$-5, compared to \$-131 for plans with high rates of hospital days per 1,000. However, in the case of ambulatory visit rates, we did not find the expected pattern of more favorable financial experience among plans with low use rates.¹ The 9 plans with low ambulatory visit rates experienced a median net revenue per enrollee of \$-49, compared to \$-16 for the 9 plans with high ambulatory visit rates.

¹ Because the necessary county-level data on ambulatory use rates are not available, the plans' ambulatory use rates are not measured relative to those of the local market area.

Comparison of market characteristics and annual net revenue per enrollee (Table IV.26) reveals some interesting results. The presence of other HMOs in the demonstration appears to be associated with the ability of HMOs to earn a surplus. Plans in single demonstration HMO markets had a surplus of \$164, while those in markets with more than one demonstration HMO experienced deficits of \$-45. The less favorable financial experience of HMOs in multiple plan market areas may reflect the fact that plans facing competitive pressures from other demonstration HMOs may find it necessary to offer more generous benefit packages to attract enrollees. HMOs in areas with above average Medicare reimbursements per beneficiary experienced deficits (\$-95). Deficits for high cost area plans suggests that market entry expectations are not being fulfilled (at least in the short run). It is possible that the deficits in the first two quarters' experience (data not shown) is driving the annual figures and, in the long run, deficits will be eliminated in high cost areas. One would expect higher net revenues in high AAPCC areas because the plans would have more latitude to cut excessive or unnecessary costs and yet received the relatively high fee-for-service based AAPCC payment. The figures in Table IV.26 also suggest that HMOs in areas with large elderly populations had surpluses.

We might expect that plans located in areas which have a relatively high poverty rate would experience less favorable financial results under the demonstration, since they may be more likely to attract enrollees who have avoided seeking either preventive care or treatment for existing illnesses due to financial barriers. Contrary to expectations, we found that plans located in areas which have a relatively high poverty rate

TABLE IV.26

ANNUAL NET REVENUE PER DEMONSTRATION ENROLLEE BY
HMO MARKET AREA CHARACTERISTICS

Plan Characteristics	N	Annual Net Revenue Per Enrollee Median
Number of Demonstration HMOs		
- Single Plan	8	164
- Multiple Plans	16	-45
Average Part A and F Reimbursement		
- Low	11	63
- High	13	-95
Physicians per 100,000 Population		
- Low	11	63
- High	13	-16
Percent of Population Covered by Medicare		
- Low	12	-45
- High	12	14
Percent of Population Nonwhite		
- Low	12	35
- High	12	-56
Percent of Population below Poverty Level		
- Low	12	-27
- High	12	14
Population per Square Mile		
- Low	13	92
- High	11	-95
Hospital Occupancy Rate		
- Low	13	-41
- High	11	43
Inpatient Days per 1,000 Area Population		
- Low	12	35
- High	12	29

TABLE IV.26 (continued)

Plan Characteristics	N	Annual Net Revenue Per Enrollee Median
PGP Membership per 10,000		
Population		
- Low	9	-41
- High	13	-16
IPA Membership per 10,000		
Population		
- Low	11	6
- High	11	-95
Presence of a Health Care Coalition		
- No	15	6
- Yes	7	-49
Presence of a Private Utilization Review Program		
- No	18	29
- Yes	4	187

experienced a somewhat higher median net revenue per enrollee than plans in areas with a lower poverty rate (\$14 versus \$-22). However, we did find that plans located in areas with a relatively high proportion of nonwhites experienced less favorable financial performance than plans in areas with a lower proportion of nonwhites (\$-56 versus \$35 per enrollee).

Different measures of the competitive pressures in the local health care market did not have a consistent effect on the plans' financial experience under the demonstration. HMOs in areas in which there was already substantial enrollment in PCP-HMOs experienced a higher median net revenue per enrollee than plans in low PCP membership areas (\$-16 compared to \$-41). However, the opposite pattern emerges when plans are classified by the total enrollment in IPA-HMOs in the local market area. Similarly, when plans are classified by whether private sector initiatives to contain health care costs are present in the local market area, different results emerge depending on whether we focus on the presence of a health care coalition or the presence of a private utilization review program. Thus, our findings do not provide any consistent insights into the relationship between HMO financial experience and the competitive pressures in the local health care market.

V. SUMMARY AND DISCUSSION

In this report, we have presented some preliminary, descriptive evidence on the utilization and financial experience of the HMOs participating in the Medicare Competition Demonstration. The analysis was based on data provided by the plans in a series of Quarterly Administrative Reports submitted to HCFA for 1984. In addition to examining the utilization and financial experience of individual plans, we have examined the relationships between each of these outcomes and the characteristics of the plans, the characteristics of the market areas in which they operate, and the plans' enrollment experience. This latter component of the analysis was designed to provide some preliminary insights into the factors likely to be associated with the performance of HMOs in the Medicare market.

A. SUMMARY OF FINDINGS

Our analysis of the plans' utilization experience focused on use rates for hospital care as well as a variety of non-hospital services. Regarding hospital care, we found that in 1984 demonstration enrollees experienced use rates considerably lower than projected 1984 rates for Medicare beneficiaries in the fee-for-service sector of the local market area. Overall, the (unweighted) plan mean of 2,189 days per 1,000 person years was 63 percent of the (unweighted) market area mean of 3,502 days per 1,000. Hospital use rates varied across plans from 1,239 to 3,845 days per 1,000, with roughly two-thirds of the plans experiencing a rate of less than 2,200 days per 1,000. Over 70 percent of the plans experienced hospital use rates that were between 40 and 70 percent of those in the fee-for-service sector of the local market area.

The data available for this study did not permit us to disentangle the differences between plan use rates and local market area rates into that portion due to demonstration impacts and that due to the nonrandom selection of enrollees. This issue will be investigated in subsequent reports once individual-level data become available. Given our findings that enrollees are more heavily concentrated in the lower risk cells of the AAPCC than the Medicare population nationally, we would expect to observe lower use rates among enrollees even in the absence of any demonstration impacts.

In addition to examining hospital use rates for individual HMOs, we examined the relationship between use rates and specific plan characteristics. To adjust for differences between plans in the prevailing use rates in the local environments in which they operate, the analysis was conducted with the plans' hospital use rates measured relative to those in the local market area. Several interesting findings emerged. First, we found that IPA-HMOs experienced higher hospital use rates than staff and group model HMOs, which is consistent with the findings of previous research on the under age 65 population. Furthermore, we found that plans with the lowest hospital use rates had been in operation more than five years, had higher than average demonstration and nondemonstration enrollment, had strong financial incentives facing HMO management, had a single decision-maker, were federally qualified, had strong peer interaction, had weak or medium quality assurance programs, and had positive Medicaid enrollments. The extent to which these patterns are due to differences across plans in the ability to constrain hospital use or to differences in the health status of the beneficiaries enrolled could not be determined from the available data,

but will be explored in subsequent analyses once individual-level data become available.

A corresponding analysis of the market area characteristics associated with the plans' hospital use rates revealed that plans with the lowest rates of hospital use were located in areas where HMOs had achieved an above average market share prior to the demonstration, where a health care coalition was present, where hospital occupancy rates are below average, where the population density is above average, and where a high proportion of residents are nonwhite. Many of the market area characteristics we examined were not associated with hospital use rates under the demonstration. In particular, hospital use rates were not related to the average Medicare reimbursement per beneficiary or to the percent of the population covered by Medicare.

Utilization rates were examined for a variety of services other than hospital care. These ranged from ambulatory encounters to various supplemental services not covered under Medicare but offered by the plans to attract enrollees. In the case of ambulatory encounters, the plans experienced an average use rate of 9 encounters per person year. Nearly 90 percent of the plans experienced between 6 and 13 ambulatory encounters per person year.

Our analysis of the financial experience of the plans revealed that the plans varied substantially in their annual net revenue experience. Twelve of the plans had actual or imputed annual deficits for 1984 and 12 had actual or imputed annual surpluses.¹ The range of annual deficits was from \$16 to \$1,758 per enrollee, while the range of annual surpluses was

¹For plans with fewer than four quarters of data, annual revenues and expenses were imputed from the available data.

from \$6 to \$1,457 per enrollee. Overall, the plans experienced an average annual loss of \$4 per enrollee, and the median plan experienced an annual loss of \$5 per enrollee.

The median total annual revenue per enrollee across all plans was \$2,312, compared to median annual expenses per enrollee of \$2,250. The distribution of median annual expenses per enrollee by major category of expense was: institutional expenses (\$1,038 per enrollee), medical expenses (\$720 per enrollee), supplemental services expenses (\$154 per enrollee), and administrative and other expenses (\$295 per enrollee). The experience of the plans varied remarkably in terms of the percent of expenses by type of service. For example, medical service expenses as a percent of total expenses varied across plans from 12.8 percent to 48.7 percent, while the corresponding range for institutional expenses was from 8.7 to 61.9 percent. The fact that the plans were at different stages of development may account for such large disparities. These disparities may also reflect differences across plans in accounting practices or in the accuracy of the self-reported financial data.

In order to provide some insight into the factors associated with the financial experience of HMOs in the Medicare market, we examined mean net revenue per enrollee for groups of plans classified by plan characteristics, market area characteristics, enrollment experiences, and service utilization rates. As expected, net revenue per enrollee was negatively correlated with hospital use rates, although this was not the case with ambulatory use rates. Associations with net revenues were also observed for many of the plan and market area characteristics examined. However many of these relationships reflected the influence on net revenue of other

factors rather than the effect of the characteristic being examined. Since there are too few HMOs to conduct a multivariate analysis, it was not possible to determine which of these characteristics actually influence financial performance, or the direction or magnitude of such effects.

B. FUTURE ANALYSES

The descriptive findings presented in this study have provided some early evidence on the utilization and financial experience of the HMOs participating in the Medicare Competition Demonstration. In future analyses, individual-level data will be used to conduct more detailed investigations of the issues raised in this study. The three key analytic activities to be conducted are (1) the analysis of the nature and extent of biased selection, (2) the individual-level use and cost analysis, and (3) the analysis of the impact of the demonstrations on the quality of the process of care.

A critical issue for both HCFA and HMOs participating in the Medicare market under TEFRA is the nature and extent of any biased selection that occurs. Biased selection occurs when, within a payment cell, Medicare beneficiaries who enroll in an HMO are systematically more likely or less likely to use services than those who do not enroll. In this case, the AAPCC payments to HMOs are biased either high or low relative to enrollees' actual risk of incurring medical expenses. To explore this issue, MPR will conduct a study which compares enrollees and nonenrollees in each market area on: prior use of health services, self-reported health status, attitudes toward the health care system and health care providers, and other socioeconomic characteristics. Data for this analysis will include two years of prior use under the Medicare program and

data from a survey of enrollees and non-enrollees on characteristics, attitudes, health status, and self-reported reasons for joining or not joining an HMO.

The second major analytic activity to be conducted is the individual-level use and cost analysis. The primary focus of this analysis will be on estimating the impact of risk-based contracting on enrollees' use and cost of services. To estimate demonstration impacts, the use and cost of services by enrollees will be statistically compared to that of two comparison groups: nonenrollees in the market areas of the participating HMOs and a sample of beneficiaries in a set of matched, external comparison sites. A major focus of the analysis will be on controlling for differences between enrollees and the two comparison groups in characteristics associated with the risk of incurring medical expenses. Such characteristics include age, sex, Medicaid status, and the use of services during the two year period prior to enrollment. For a subset of the sample, survey data on socioeconomic characteristics, attitudes, and self-reported health status will be incorporated into the analysis.

The third major analytic activity is an examination of the differences between the risk-based plans and the fee-for-service sector on the use of very specific services and procedures for particular tracer conditions. Detailed abstraction forms will be used to collect data from individual beneficiary medical records for eight risk-based plans and fee-for-service providers in Miami, FL; Central Massachusetts, Detroit, MI; and Los Angeles, CA. The general process of care including the use and interpretation of professional services, diagnostic tests and the relationship between inpatient and outpatient care are the focus of study. Very

explicit medical records abstraction forms have been developed in consultation with three expert panels of nationally recognized physicians recommended by key medical societies and institutes of health concerned with the care of the elderly. The areas targeted for study are (1) the basic process of ambulatory care including: history taking and early detection of disease, hypertension, diabetes, and (2) the treatment of resource intensive conditions including colo-rectal cancer and congestive heart failure, both of which occur frequently among the Medicare population.

APPENDIX B

TABLE B.1
DEMOGRAPHIC COST FACTORS USED IN THE AAPCC

Sex and Age	Institutionalized	Non- Institutionalized Medicaid	Non- Institutionalized Non-Medicaid
Male			
65-69	2.05	1.35	0.70
70-74	2.15	1.55	0.80
75-79	2.35	1.95	1.00
80-84	2.35	2.30	1.20
85 and over	2.35	2.60	1.35
Female			
65-69	1.65	0.90	0.60
70-74	1.90	1.15	0.70
75-79	2.20	1.50	0.90
80-84	2.20	1.80	1.10
85 and over	2.20	2.15	1.25

Source: GHPO, HCFA

APPENDIX C

ENROLLMENT, UTILIZATION, AND FINANCIAL DATA
IN THE QUARTERLY REPORTS

A. Enrollment:

Purpose of Data Collection: Monitor enrollment trends

In Table 1, "Total Membership" is broken down by age and for Medicare and Medicaid enrollment. The age breakdown should add up to Total Membership- Number of Members. Total Medicare membership is broken down into beneficiaries enrolled in the risk-demonstration and Medicare cost or GPPP contracts. Medicaid enrollment includes all members who receive Medicaid assistance who are not dually eligible under Medicare.

We realize that GHPOs verifies enrollment. However, our objective is to have the most current enrollment data prior to this verification.

Member:

An individual who has been enrolled as a subscriber or an eligible dependent of a subscriber and for whom the alternative health plan has accepted the responsibility for providing basic health care services and contracting for supplemental health services.

Member Month:

A member month is equivalent to one member for whom the alternative health plan has recognized capitation-based premium revenue for one-month. Instruction: Cumulate member months for each quarter.

Total Membership:

All members as defined above.

Under Age 65:

Those members under age 65 as of last birthday.

Age 65 and Older:

Those members age 65 and older as of last birthday

Medicare:

Those members eligible for Medicare and enrolled under the risk-demonstration or cost-reimbursement arrangements (i.e., Section 1876 cost contract, Section 1833 GPPP contract, or Medicare wrap-around program). There are three Medicare eligibility categories: under-65 disabled; aged 65+; ESRD.

Medicaid:

Those members enrolled under a prepaid contract between an alternative health plan and the appropriate State agency administering medical assistance under a state plan approved under Title XIX of the Social Security Act where that state agency agrees to part or all of the member's financial obligation to the alternative health plan. Do not include Medicaid eligibles who are also eligible for Medicare.

A. Enrollment

Table 1: Enrollment

# of Members	Cumulative Member Months
Total Membership	
Under age 65	
Age 65 and Over	
Title XVIII	
Non-risk	
Risk-demo	
Under 65, disabled	
Aged 65+	
ESRD	
Title XIX	

Table 2: Medicare competition demonstration enrollment,
institutionalized

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

Table 3: Medicare competition demonstration enrollment,
non-institutionalized welfare

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

Table 4: Medicare competition demonstration enrollment,
non-institutionalized, non-welfare

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

Table 5: Number of Medicare competition demonstration enrollees converted from Medicare Section 1876 cost or Section 1833 G3P during quarter

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

Table 6: Number of Medicare competition demonstration disenrollees during quarter

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

Table 7: Number of Medicare competition demonstration enrollee deaths during quarter

<u>Age</u>	<u>Male</u>	<u>Female</u>
under-65		
65-69		
70-74		
75-79		
80-84		
85+		

B. Utilization :

Purpose for data collection: Monitor aggregate use trends.

Utilization statistics should be reported for total plan membership, including Medicare risk-demonstration enrollees and for demonstration enrollees separately. If high and low option plans are offered, utilization statistics should be reported separately for each option and should not be combined.

Statistics should be reported whether or not the alternative health plan ultimately bears financial responsibility for the service; for example, coordination of benefits days. Do not include members' discretionary use of services where the alternative health plan has not agreed to arrange or pay for these services. Include those non-authorized services where the plan has agreed to pay for these services.

Those actual hospital and other institutional care (e.g., skilled or intermediate care) days in the quarter for members discharged in the quarter should be reported. For stays that continue beyond the reporting period (e.g., admitted March 30, 1984, discharged April 6, 1984), these days and the expenses associated with these days should be counted in the quarter when discharge occurs (i.e., second quarter, calendar year 1984).

Hospital Days:

Hospital days do not include in-and-out surgery. Includes newborn days both contiguous with and following the mother's confinement. Patient days may be calculated using the following definition:

Patient Day (from AHA Uniform Hospital Definition):

A "Patient Day" is the unit of measure denoting lodging facilities provided and services rendered to one hospital or other institutional care inpatient between the census-taking hour on two successive days. As a period of service rendered an inpatient between the census-taking hours on two successive days, the day of discharge is counted only when the patient was admitted on the same day. When a patient is admitted and discharged on the same day, this period must be counted as one patient day and taken into consideration when computing total patient days.

Ambulatory Encounters:

Because of the wide variation in ambulatory care statistics, ambulatory encounters are broadly defined. Includes the ambulatory encounters experienced by the total membership and by the risk-based Medicare demonstration membership during the time period. Include encounters for all providers and specialties both "in-house" and "provided elsewhere" (see definitions under "revenues and expenses"). Includes referrals and in-area emergency room visits. Does not include home health visits as defined below. "Ambulatory encounters" are further defined as follows:

Ambulatory Services: Health services provided to alternative health plan members who are not confined to a health care institution. Ambulatory services are often referred to as "outpatient" services, as distinct from "inpatient" services.

Encounter: A face-to-face contact between an alternative health plan member and a provider of health care services who exercises independent judgment in the care of a member. Includes all medical, dental, optometric, podiatric, mental health, audiologic encounters. Includes encounters with nurse practitioners and physician assistants that are not incident to seeing a physician.

Emergency Room Visits:

Includes the number of visits by total plan membership and by risk-based Medicare demonstration members to in-area hospital emergency rooms.

Other Institutional Care:

Includes inpatient care days in a skilled nursing, intermediate, convalescent or long-term care facility experienced by the total plan membership and risk-based Medicare demonstration enrollees.

Home health care:

The home health care visits received by the total alternative health plan membership and Medicare competition demonstration enrollees in their homes for treatment of an illness or injury provided by a home health agency. A home health agency is a public or private agency specializing in providing skilled nursing services and other therapeutic services, such as physical therapy in the home.

Dental services:

Dental visits for total plan membership and Medicare demonstration enrollees for preventive, diagnostic, and routine oral health care including exams, x-rays, cleanings, fillings and extractions, and if applicable, endodontics and prosthetic dental care (i.e., crowns, bridges, and dentures).

Refractions:

Visits for eye examinations performed to establish the need for eyeglasses or contact lenses for total plan membership and Medicare demonstration enrollees during the quarter. .

Eyeglasses Dispensed:

The number of eyeglasses or contact lenses dispensed to total plan membership and Medicare demonstration enrollees during the quarter.

Audiology services:

The number of audiology examinations conducted for total plan membership and Medicare demonstration enrollees during the quarter..

Hearing Aids Dispensed:

The number of hearing aids dispensed for total plan membership and Medicare demonstration enrollees during the quarter.

Prescription Drugs:

The accrued number of outpatient prescriptions filled for total plan membership and Medicare demonstration enrollees during the quarter.

B. Use

<u>Use</u> <u>Statistic</u>	<u>Total Membership</u>	<u>Medicare Competition Enrollees</u>
Hospital Discharges		
Hospital Days		
Skilled Nursing Facility Discharges		
Skilled Nursing Facility Days		
Home health visits		
Ambulatory encounters		
Emergency Room visits		
Audiology visits		
Hearing aids dispensed		
Refractions		
Eyeglasses dispensed		
Outpatient prescriptions		
Dental office visits		

C. Revenues and Expenses:

Purpose of Data Collection: Monitor alternative health plan financial operating trends by summary components

The report shows summary financial operating data. Revenues are broken down to show the source of income and revenue dependency on public or private enrollment bases. Offsets for Coordination of Benefit (C.O.B.) and Insurance Recoveries are shown. Expenses for medical, institutional, non-institutional, and administrative/other components are shown. Medical expenses are broken down into services provided in-house by the alternative health plan's staff, medical group, or IPA; and services provided elsewhere, including referrals and emergency services.

Revenues and expenses should be reported for the total plan, including the Medicare risk-demonstration and for the demonstration separately. We realize that cost allocation procedures vary widely among alternative health plans. Some demonstrations may not accrue Medicare risk-demonstration financial data separately. If this is the case, please indicate the basis on which you have allocated a portion of total plan costs or revenue to the Medicare risk-demonstration.

Using General Accepted Accounting Principles (G.A.A.P.), report revenues and expenses as defined below for the quarter. Full expenses, whether or not the alternative health plan ultimately bears financial responsibility should be shown. For example, the full hospital expenses are shown in the "inpatient hospital" line. Offsets to these expenses such as C.O.B. and Insurance Recoveries are shown as revenue.

Similarly, full medical expenses are shown with a year end adjustment for withholds or other offsets returned to the alternative health plan as a contra category. This adjustment should be shown on the fourth quarterly report submitted.

In addition to footnoting allocation rules, you should footnote differences in reporting if unable to report in lines similar to these revenue/expense accounts.

Premium:

Revenue recognized on a prepaid basis received from individuals and groups during the quarter for provision of a specified range of services. Does not include premium revenue received from state Medicaid agencies in behalf of Medicaid eligible or dually eligible Medicare members (see Medicaid below).

Fee-for-Service:

Revenue recognized by the alternative health plan for providing health services to non-members by HMO providers and to members through providing services excluded from their prepaid benefit packages.

Co-payments and Deductibles

Revenue collected from members by the alternative health plan related to the use of services included in the alternative health plan's benefit package.

Medicare

Revenue received from the Health Care Financing Administration for services to a Medicare beneficiary broken down into cost-reimbursement and risk-based (i.e., AAPCC) reimbursement, if applicable.

Medicaid

Revenue received from a state Medicaid agency for services to a Medicaid beneficiary. Includes revenue received from the state Medicaid agency paid in behalf of a dually eligible Medicare member.

Interest

Interest earned from all sources.

C.O.B.

Income from Coordination of Benefits

Insurance Recoveries

Revenue recovered from re-insurance or other risk-sharing arrangements,

Other Revenue:

Revenue from sources not covered in the above accounts (e.g., recovery of bad debts, or capital gains).

Total Revenue

Total of the above revenue accounts

Medical Expenses

Expenses for the delivery of medical services including the following components:

Provided In-House

Include all expenses for medical services provided by the alternative health plan directly or by providers under contract to the alternative health plan, including the plan's affiliated medical groups or individual physicians. Expenses include compensation and fringe benefits for personnel time (professional and non-professional) devoted to or in direct support of health service delivery (do not include compensation to medical personnel for time devoted to administrative tasks); occupancy (i.e., costs of using a facility, fire and theft insurance, utilities, maintenance, lease); lab and x-ray; malpractice insurance; supplies; other costs in support of in-plan health service delivery. Depreciation, amortization and interest expenses associated with medical services should be included in "Administration and other Expenses".

Direct medical expenses which have been included in the "total expenses provided in-house" should be broken out as follows:

Physician Salaries:

Salaries including fringe benefits paid to physicians for delivery of medical services.

Physician Capitation:

Capitated payments paid by the alternative health plan to affiliated physician groups or individual physicians.

Physician-Fee-for-Service:

Fees paid by the alternative health plan on a fee-for-service basis for delivering medical services to plan members. Includes fees paid to referral physicians under contract to the alternative health plan.

Non-physician medical compensation:

Compensation, including fringe benefits, paid by the alternative health plan to non-physician providers engaged in the delivery of medical services and to personnel engaged in activities in direct support of the provision of medically-related services. This includes dentists, psychologists, optometrists, pharmacists, podiatrists, physician extenders, nurses, clinical personnel such as ambulance drivers, technicians, paraprofessionals, maintenance persons, quality assurance analysts, administrative supervisors, secretaries to medical personnel, and medical records clerks.

Provided elsewhere:

Include all expenses for medical services not provided by the alternative health plan's health delivery system usually not at alternative health plan sites and not under contract to the alternative health plan. Total expenses should be broken down into the following components:

o Referrals:

Expenses for all professional and ancillary services including consultations, lab and x-ray, and other medically related services provided by physicians not under contract to the alternative health plan.

o Emergency Services:

Emergency service includes in-area hospital emergency room costs incurred by alternative health plan members for which the alternative health plan is responsible on a fee-for-service basis.

o Out-of-Area Services

Out-of-area service costs include out-of-area emergency physician, hospital, and other related medical costs incurred by alternative health plan members.

o Other

Expenses for all other services by non-contracting alternative health plan providers

Year-end Adjustment

A contra category for adjusting the full medical expenses reported. For example, physician withholdings returned to the HMO should be included here. This year end adjustment should be appended to the fourth quarterly report submitted.

Institutional Expenses

Expenses for the delivery of institutional health services including the following components:

Inpatient Hospital:

Include all inpatient hospital costs for routine and ancillary services for AHP members while confined to an acute care hospital during the quarter. Costs associated with admissions in the reporting period discharged in the next reporting period, should be carried-over and reported in the next quarter. Does not include out-of-area hospitalization. Routine hospital service includes regular room and board (including intensive care units, coronary care units, and other special inpatient hospital units), dietary and nursing services, medical surgical supplies, medical social services, and the use of certain equipment and facilities for which the provider does not customarily make a separate charge.

Ancillary services may also include laboratory, radiology, drugs, delivery room and physical therapy services. Ancillary services may also include other special items and services for which charges are customarily made in addition to a routine service charge.

Charges for non-alternative health plan physician services provided in a hospital are included in this line item only if included as an undefined portion of charges by a hospital to the alternative health plan. If separately itemized or billed, physician charges should be included in referrals.

Other Institutional:

Includes the cost of using skilled nursing and intermediate care facilities. Skilled nursing facilities are primarily engaged in providing skilled nursing care and related services for patients who require medical or nursing care or rehabilitation service. Intermediate care facilities are for individuals who do not require the degree of care and treatment which a hospital or nursing care facility provides, but require care and services above the level of room and board.

Other Non-institutional services:

Dental expenses:

The costs associated with providing preventive, diagnostic, and routine oral health care including exams, x-rays, cleanings, fillings and extractions, and if applicable, endodontic and prosthetic dental care (e.g., root canals, crowns, bridges, and dentures).

Optometric expenses:

The costs of refractions (i.e., eye examinations) and eyeglasses.

Audiology expenses:

The costs of hearing examinations and hearing aids.

Prescription drug expenses:

The costs associated with providing outpatient prescription drugs.

Other non-institutional, non-medical expenses:

The costs associated with miscellaneous non-institutional, member benefits (e.g., durable medical equipment, transportation service, routine podiatric care, health promotion/"wellness" clinics or seminars). Indicate the services which these costs represent.

Administration and Other Expenses:

Costs associated with the overall management and operation of the alternative health plan which are not appropriately identified with medical service cost centers. Including the following components:

Administrative Expenses:

All expenses for administrative services including compensation and fringe benefits for personnel time devoted to or in direct support of administration. Include compensation to medical personnel for time devoted to administration here. Include expenses for management contracts. Do not include marketing and member services costs.

Marketing expenses:

All expenses associated with promoting and selling the alternative health plan. Includes compensation (i.e., salaries and commissions) and fringe benefits of marketing staff, costs of preparing marketing material, costs of promotional activities (e.g., purchase of airtime, billboard space), and any other marketing-related costs.

Member services expenses:

All expenses associated with responding to member inquiries about benefits and resolving member complaints and grievances. If you do not have a distinct member services function, do not fill out this line item.

Interest expenses:

Interest on loans paid during the period.

Depreciation and Amortization:

Depreciation expense is the incremental consumption of the value of a fixed asset during the asset's useful life.

Amortization expense are the costs of certain assets spread over their estimated service lives (e.g., leasehold improvements).

Re-insurance:

Total expenses for re-insurance. Includes payments for stop-loss, contributions to beneficiary stabilization fund, risk-reserve pool, or any other formal risk-sharing mechanism.

Total Administration/Other Expenses:

Total of the above categories.

Total Expenses:

Total of medical expenses, institutional expenses, non-institutional expenses, and administration/other expenses.

Surplus (Deficit):

Excess or deficiency of total revenues over total expenses.

Taxes

State and federal taxes for the period (for-profit organizations only).

Net Surplus (Deficit)

Excess or deficiency of total revenues over total expenses less state and federal taxes for the period.

C. Revenues and Expenses:

<u>REVENUES</u>	<u>TOTAL PLAN</u>	<u>MEDICARE RISK- DEMO</u>
Premium	\$ _____	\$ _____
Fee-for-service	_____	_____
Co-payments	_____	_____
MEDICARE (TOTAL)	_____	_____
Medicare, costs	_____	_____
Medicare, risk-demo	_____	_____
Medicaid	_____	_____
Interest	_____	_____
C.O.B.	_____	_____
Insurance Recoveries	_____	_____
Other Revenue	_____	_____
TOTAL REVENUE	_____	_____

<u>EXPENSES</u>	<u>TOTAL PLAN</u>	<u>MEDICARE RISK- DEMO</u>
<u>MEDICAL EXPENSES</u>		
PROVIDED IN-HOUSE (TOTAL)	\$ _____	\$ _____
Physician - Salaries	_____	_____
Physician - Capitation	_____	_____
Physician - Fee-for- Service	_____	_____
Non-physician medical compensation	_____	_____
PROVIDED ELSEWHERE (TOTAL)	\$ _____	\$ _____
Referrals	_____	_____
Emergency Services	_____	_____
Out-of-area Services	_____	_____
Other	_____	_____
Year-end adjustment	(_____)	(_____)
TOTAL MEDICAL EXPENSES	_____	_____

<u>EXPENSES</u>	<u>TOTAL PLAN</u>	<u>MEDICARE RISK- DEMO</u>
<u>INSTITUTIONAL EXPENSES</u>		
Inpatient Hospital	\$ _____	\$ _____
Other Institutional	_____	_____
Year-end adjustment	_____	_____
TOTAL INSTITUTIONAL EXPENSES	(_____)	(_____)
<u>ADDITIONAL SERVICES EXPENSES</u>		
Outpatient prescription drugs	_____	_____
Audiology visits and hearing aids	_____	_____
Dental care	_____	_____
Refractions and eyeglasses	_____	_____
Other non-medical services	_____	_____
Year-end adjustment	_____	_____
TOTAL ADDITIONAL SERVICES EXPENSES	_____	_____

<u>EXPENSES</u>	<u>TOTAL PLAN</u>	<u>MEDICARE RISK- DEMO</u>
<u>ADMINISTRATION AND OTHER EXPENSES</u>		
NEED NOT BE RISK FROM → Administrative Expenses \$ _____	_____	\$ _____
Marketing	_____	_____
Member Services	_____	_____
Interest Expenses	_____	_____
Re-insurance	_____	_____
Depreciation and Amortization	_____	_____
TOTAL ADMINISTRATION/ OTHER EXPENSES	_____	_____
 TOTAL EXPENSES	_____	_____
 SURPLUS (DEFICIT)	_____	_____
 Taxes	_____	_____
 NET SURPLUS (DEFICIT)	_____	_____

Footnotes for Reporting Basis of allocations to Medicare risk-demo: for those cost centers where expenses were allocated to from total membership to the Medicare risk-demonstration, indicate the basis of allocation for each cost center.

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